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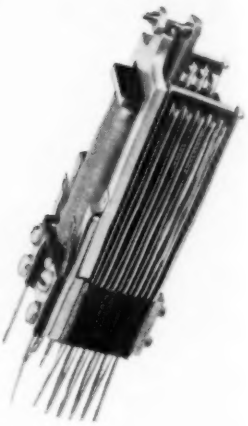

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about 3/5 actual size

1000 for a Nickel

WHEN you drop a nickel in a pay station and dial a call—or dial from home or office—as many as 1000 telephone relays go into action.

The relay is the little device illustrated above—an electrical switch that works far faster than you can wink. You probably don't know it exists. But you couldn't make a telephone call without it.

These relays leap into service when you telephone, opening and closing circuits. They operate millions of times in their lifetime.

Bell Telephone Laboratories designed this relay and some of the Laboratories' best scientific minds are spending all their time improving it.

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Our Municipal Notebook

New York to Rezone After 32 Years

ON May 13, 1948, the Board of Estimate of the City of New York appropriated $160,000 for a comprehensive survey of the city's zoning regulations. Thus the nation's metropolis, which pioneered as the first municipality in the United States to adopt comprehensive zoning, is on its way toward modernizing the ordinance and maps, which have had some hundreds of "spot" modifications in the 32-year interval. For the survey just approved, the services of the consultant firm of Harrison, Ballard & Allen have been retained.

Long-time readers of THE AMERICAN CITY may recall that when New York's original "districting system"—as it was then called—was adopted, this magazine, in its issue of August 1916, commented editorially as follows:

New York's success in adopting a comprehensive districting plan will no doubt afford great stimulus to similar work elsewhere. But it cannot be too strongly emphasized that other cities will make a serious mistake if they consider the New York restrictions as a standard to be copied in detail. New York has sinned so greatly in the past that its districting has had to be based altogether too much on congested skyscraper and tenement house conditions. As Frank Backus Williams said in his letter in THE AMERICAN CITY for May 1916: *"Other cities can do better than we, and will be most culpable if they fail to do so. We urge them not to wait until it is too late."*

We hope that New York's modernized zoning ordinance, when drafted and adopted, will profit by the cumulative experience of the hundreds of cities, large and small, that have enacted zoning ordinances during the last three decades—and that these municipalities, on their part, may profit both from the lessons of New York's mistakes and from any forward steps which may now be taken.

Requirements for greater spaciousness in future developments may well be outstanding among these forward steps. A recent message of Mayor Fletcher Bowron of Los Angeles is worth pondering over in this connection. Vetoing an ordinance which would have relaxed zoning standards in three residential zones, Mayor Bowron said:

"To insure the future of Los Angeles, we cannot, we must not, materially deviate from sound planning practices and principles, or permit the sweating of the land and an almost unrestricted increase in population density, passing on to the citizens of Los Angeles of future years blighted areas and an illy planned and developed city."

For Defense And Better Living

MANY readers will recall the article, "Planning Cities for the Atomic Age," in THE AMERICAN CITY for August 1946, in which town planner Tracy B. Augur presented the case for urban dispersal for better peacetime living while at the same time improving our chances of averting war and of surviving one if it should come. Mr. Augur has now renewed this attack on outmoded patterns of urban development. In a four-page article in the May 1948 issue of the *Bulletin of the Atomic Scientists* he says:

As we carry forward the great program of city building in which we are now engaged, we can build for strength or we can build for weakness. We have that choice. We can add the million dwellings and the stores and factories and schools we build each year to our big urban centers. By so doing we can increase their size and congestion and confusion and make them at once less efficient than they now are as instruments of modern living and production, and even more inviting as targets for attack. Or we can direct the new building into channels that will produce a dispersed pattern of small, efficient cities much more attuned to the needs of modern living, modern commerce and modern industry and far less inviting as potential targets.

Mr. Augur's specific proposal is that, instead of continuing to build vast urban concentrations, we could build clusters of well-dispersed small cities without sacrificing any of the economic or social advantages of the big centers and without perpetuating their disadvantages.

The complete replanning and rebuilding of a large existing city to make it truly efficient is a job of staggering cost and difficulty and long duration. The planning and building of modern new satellites is simple by comparison and can begin at once and achieve early improvement in the nation's urban structure. It costs less than the building of unplanned fringes around badly planned centers . . .

The cluster form of city not only disperses urban territory through the country, it also disperses the country through urban aggregations and makes it more accessible and more useful to their people. . . .

There is no place in such a program for the familiar lament that money spent on national defense might otherwise supply the nation with adequate schools or clear its slums. Money spent on this phase of defense builds schools and clears slums too. Improved national defense is, in fact, a by-product of the construction of the facilities most greatly needed for fruitful peace-time living.

Utility Companies to Aid Community Development

FOUR privately owned utility companies are launching an intensive area development program to promote the Middle South—the three states of Louisiana, Arkansas and Mississippi—according to the *News Letter* of the Louisiana Department of Commerce

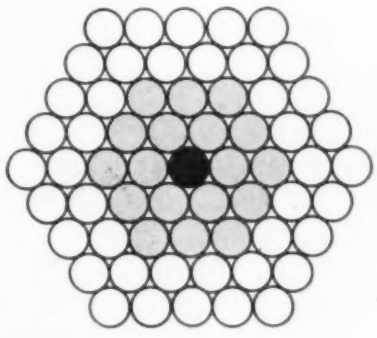


FIG. 1

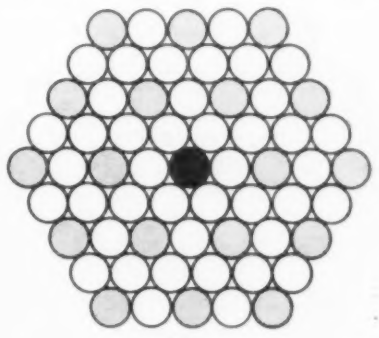


FIG. 2

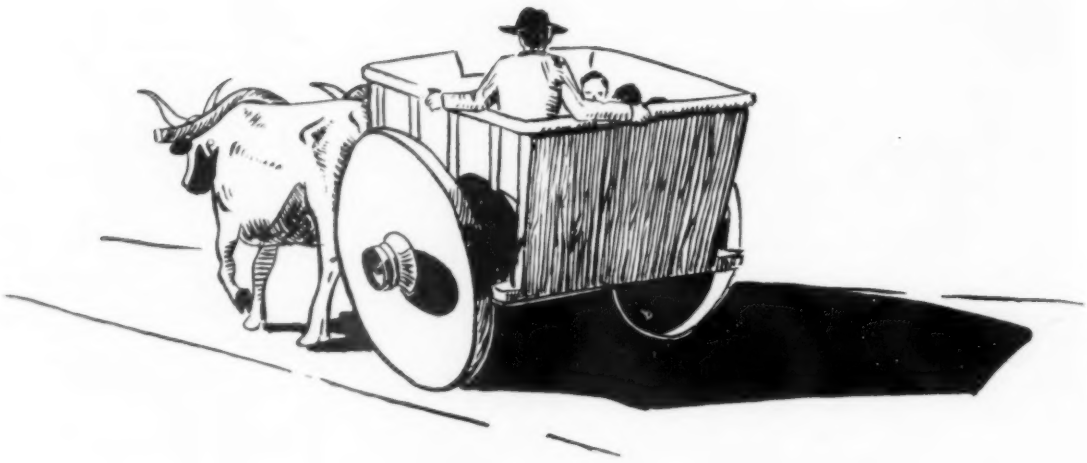
These diagrams illustrate two different methods of arranging the urban area of a city.

Figure 1 shows the usual concentrated urban development with open country beyond. Figure 2 shows the same areas rearranged so that the urban development is broken up into semi-independent communities separated from one another by at least two miles of open country.

Urban area is represented by the gray and black circles; open country by the white circles. Each circle is assumed to represent a land area 2 miles in diameter and the urban circles are assumed to contain an average population of 50,000 each, giving a total population of 570,000.

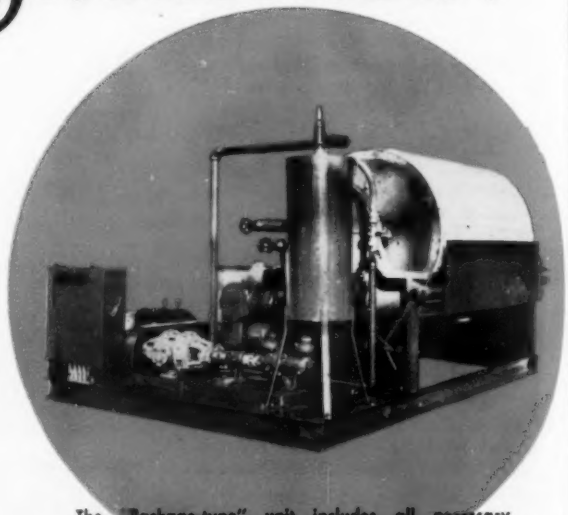
In both arrangements the total population is the same and the same total area is devoted to urban development and to open country. The principal difference lies in the distances between parts of the city, which are nearly doubled. However, travel between points in the dispersed city would be largely through open country, so that the time consumed would generally be no greater than for like travel through the streets of the concentrated city.

FROM TRACY B. AUGUR'S 1946 ARTICLE "PLANNING CITIES FOR THE ATOMIC AGE."



No! too old fashioned!

Ox cart transportation was O.K. many years ago, but today — it's out! New forms of transportation have taken over. New methods of Sewage Treatment have replaced old methods too — yet, surprisingly enough we haven't paid much attention to that phase of advancement. We haven't paid enough attention to this vital factor in our every day life. Will it take a severe epidemic, costing many lives, to make us notice the inadequate conditions of sewage disposal existing in our own communities? Investigate today! Insist on an installation including Eimco Vacuum Filters for sewage sludge dewatering. It's the only safe way for every city. Write for bulletin F2005.



The "Package-type" unit includes all necessary equipment for operation of the dewatering unit, mounted on subbase with wiring and piping complete — ready to "hook-up" to supply lines.

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and industry. Outstanding social, civic, and economic leaders in the tri-state area participated in a conference to inaugurate the program at Greenville, Miss., in April.

Some idea of the aims and purposes of the drive were well expressed by C. Hamilton Moses, president of the Arkansas Power and Light Company, in his dedication address. Mr. Moses has been active in stimulating the community council movement in his state. He declared:

"We are dedicating the efforts of the four major electric service companies in this Middle South section—the four companies, known as the Almno System, in cooperation with our three state governments—to the building of this region, the uplift of the social, the living, and the spiritual welfare of our people; and the preservation of the American way of life. We are doing cooperatively, and as a region, just what each state has been doing for 25 years. We are collectively recognizing that we are citizens and community builders first, and electric companies next."

Freedom Gardens Still Need Cultivation

SHOWN here is the new emblem being used in the Freedom Garden drive sponsored by the Office for Food and Feed Conservation of the United States Department of Agriculture. A new leaflet entitled "Get More from Your Freedom Garden" is available in quantity free from the Office at Washington 25, D. C.

A message from Paul C. Stark, Director of the National Garden Program, points out that although interest in home gardens and home food preservation is reaching a high level this year, further encouragement is desirable, particularly in successive plantings and careful tending of gardens, and preservation of both home garden surplus and commercially produced vegetables and fruit when abundant.

Supreme Court Rules Against Restrictive Covenants

ALTHOUGH the war against discrimination is far from being won, several recent events make it clear that substantial gains are being made. Outstanding was the 6—0 ruling by the United States Supreme Court on May 3 that restrictive covenants barring Negroes or other racial groups from owning or renting real estate are not legally enforceable.* The ruling has been widely acclaimed for its fairness and is expected to have considerable effect in determining racial patterns of new subdivisions, many of which were controlled by restrictive covenants.

Chief Justice Fred M. Vinson handed down two opinions, one dealing with cases arising in Missouri and Michigan, while the other originated in the District of Columbia. The state court issue was decided on the basis of the Fourteenth Amendment to the Constitution which declares that all persons, whether colored or white, shall stand equal before the laws of the states, and that no discrimination shall be made by law because of an individual's color. In the District of Columbia case, the court said it was unnecessary to consider any constitutional question, because of the Civil Rights Act of 1866. This act states that all citizens, regardless of color, shall have the right to "inherit, purchase, lease, sell, hold and convey real and personal property."

Neither of the opinions prohibit the making of private agreements with regard to land transactions, but both prohibit the judicial enforcement of such agreements if they involve discrimination as to race or color.

Local FEPC Ordinances

Progress on another front is the growth in the number of municipalities to provide for a Fair Employment Practices Commission, as reported by the American Municipal Association. Philadelphia recently became the fifth major U. S. city to set up such a Commission. It will serve without pay and is empowered "to proceed against all persons or organizations that discriminate in their employment practices because of race, color, creed, or national origin." Violators are liable for fines up to $100 or jail terms of 30 days. The commission was directed to formulate an educational program and report to the mayor and council every year.

Other cities having F.E.P. ordinances are Chicago, Minneapolis, Milwaukee, and Cincinnati. A measure adopted by Cleveland last year permits the city to revoke the license of any commercial amusement place which is found to discriminate, and an F.E.P. commission also is currently being considered there.

*For an historic brief against racial covenants see *Prejudice and Property*, submitted to the Supreme Court by Tom C. Clark, Attorney General of the U.S., and Philip B. Perlman, Solicitor General of the U.S. Published by Public Affairs Press, 2153 Florida Ave., Washington 8, D. C. 1948. 104 pp. Cloth, $2.00. Paper, $1.00.

A popular summary of *To Secure These Rights*, the Report of the President's Committee on Civil Rights, dealing with racial and religious discrimination, is contained in "These Rights Are Ours to Keep," by Jerome Ellison. Published by Public Affairs Committee, Inc., 22 E. 38th St., New York 16, N. Y. 1948. 32 pp. 20 cents.

A book by Dr. Robert C. Weaver, *The Negro Ghetto*, is being published this month by Harcourt, Brace and Company, Inc., of New York. It is a detailed study of the development of Negro segregation in Northern cities, and it presents a program for developing democratic patterns in housing—the kind of program that can be implemented now that the restrictive covenant is banned.

Winning entry by Russell Sambrook of Rutherford, N. J., in the "artist group" of the national McCandlish Poster Competition contest, judged in Philadelphia's Gimbel Auditorium last month. The theme was chosen to coincide with the Freedom Train tour. Prize-winning posters will be exhibited in leading cities.

2,000,000-Gal. ELEVATED TANK
IN WASHINGTON'S WATER SYSTEM

THE Horton spheroidal elevated water tank shown above provides a 2,000,000-gal. reserve in the Second High Service Area of the water system in Washington, D. C. The rapidly expanding population in that area had caused an increased demand and, during periods of peak consumption, it was drawing too heavily on the low service area from which it was receiving its supply.

The location and size of the tank made its architectural appearance an important consideration. When bids were taken for its installation, the specifications included a requirement that it be "as pleasing in appearance as possible." The design selected is a spheroidal tank supported on an outer ring of cylindrical columns and a central fluted column, a new construction feature in elevated tank design. The fluted central column serves primarily to support the center of the tank bottom, and does not contain water. Inside it is a 5-ft. diam. riser which is connected to the mains. The tank has a range in head of 34 ft., 6 in. between the upper and lower water levels.

When you need a tank of special design, like the one at Washington, or a standard ellipsoidal-bottom or radial cone bottom structure, write our nearest office for information and estimating figures.

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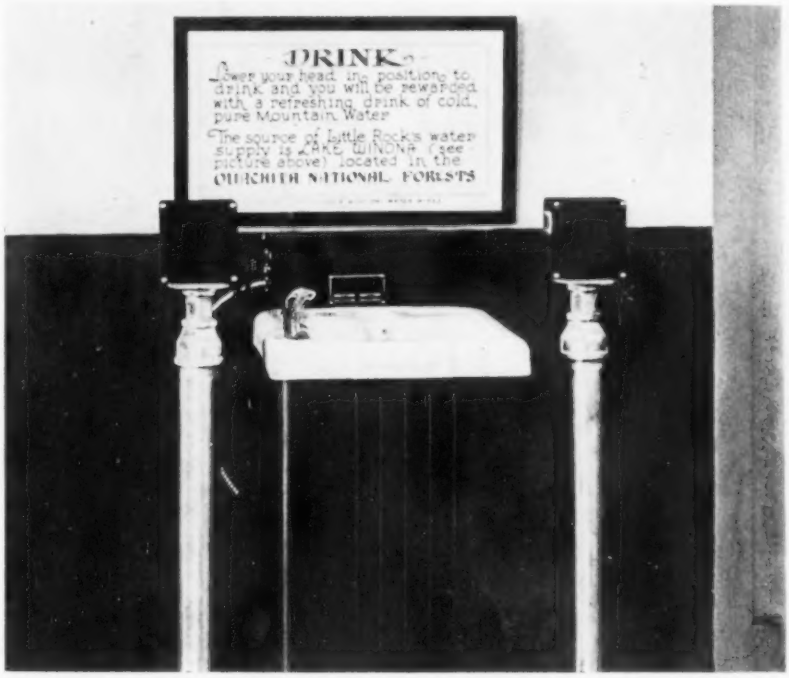
San Francisco 11.....1233-22 Battery Street Bldg.
Philadelphia 3.....1616-1700 Walnut Street Bldg
Atlanta 3.....2114 Healey Bldg
Havana.....402 Abreu Bldg
Detroit 26.....1501 Lafayette Bldg

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

Electric Eye Is Good-Will Builder

LITTLE ROCK, Ark., municipal water works directs attention to the service it renders by the use of a General Electric electric-eye drinking fountain installed at the municipal airport. L. A. Jackson, Manager-Engineer of the water works, reports that this was contributed at a cost of approximately $450. The same type of installation has been in the water-works office lobby for the past eight years.


DRINK
Lower your head into position to drink and you will be rewarded with a refreshing drink of cold, pure Mountain Water
The source of little Rocks water supply is LAKE WINONA (see picture above) located in the
OUACHITA NATIONAL FORESTS

Predicts Return Of Steam Popularity

STEAM power for water pumping stations may be making a comeback. In a contest of reliability, says A. C. Hutson, steam power has a big edge over electricity. Mr. Hutson, assistant chief engineer of the National Board of Fire Underwriters, New York City, pointed this out at the New Jersey Section AWWA fall meeting held recently in Atlantic City.

The past 40 years have seen electric power combined with centrifugal pumps match the operating economy of steam power applied to triplex pumps, and beat the installation costs because of the smaller amount of room required. However, recent breakdowns in electric supply have introduced a reliability factor that is swinging designers back to steam.

Electricity is like dynamite, Mr. Hutson explained. When it fails, it usually is accompanied by an explosion that destroys switchgear and other accessories. The average water works man does not realize how dependent he is on electricity. He feels safe when he has an auxiliary source of power for his big pumps, but does not realize that this is not of much use without the operation of the small pumps.

A few years ago Buffalo had a short circuit in a switching block. This resulted in an explosion that left the plant without electric power for several hours. Buffalo has very little storage capacity, and if it had not had steam power also, it would have had to shut down the filter plant.

Cleveland also had a major electric breakdown requiring five days to recondition. However, this city was fortunate in having a large amount of stored water. The probabilities of a severe fire and an electrical breakdown are slim, but they represent an eventuality that should be considered.

Chicago's newer pumping stations were electrically operated, Mr. Hutson stated, but it is highly improbable that all stations will be completely electrified. Those now using steam will probably continue to do so.

In any case, said Mr. Hutson, if the water utility is to rely solely on electric power, it should provide plenty of clear-water storage and give special consideration to standby generating units.

Fluorine Use— A Correction

NO PUBLIC water supplies are being treated with fluorine in Massachusetts, reports Arthur D. Weston, Chief Sanitary Engineer, Department of Public Health. In the February issue of THE AMERICAN CITY, on page 103, an article reported that fluorine was used at Belchertown and Wrentham, Mass. While fluorine is not being added to the public water supplies of these two towns, it is being added to the water supplies at the local state schools. As the application is under close scientific control, the results will be a guide in deciding the future of this type of treatment in Massachusetts supplies.

Get Liability Insurance

THAT every water department should carry public utility insurance, and should make all possible efforts to investigate distribution damage that concerns a need for claim adjustments, was pointed out by Charles G. Bourgin, Superintendent of Water Supply of Montclair, N. J., at the New Jersey Section AWWA fall meeting in Atlantic City.

Citing examples, he explained that leaks cause unexpected undermining, and on occasion a blown joint has undermined two lengths of pipe, releasing large volumes of water that could have caused extreme damage. Another time a piece of pipe the size of a shovel was blown from a 20-inch main and allowed the escape of approximately a million gallons of water, with resulting damage to property.

WHEN SPECIFYING CLARIFIERS FOR SEWAGE TREATMENT...

Why buy Dorr?

1 { BECAUSE Dorr Clarifier first cost is economical . . . as demonstrated by competitive bids.

2 { BECAUSE Dorr Clarifier performance is equal to or better than that of others . . . as clearly shown by extensive operating results.

3 { BECAUSE Dorr Clarifier maintenance costs are far below those of others . . . as proven by actual records from 135 Dorr units showing an average maintenance cost of $5.91 per unit per year over a 11.4 year period.

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RESEARCH ENGINEERING DORR EQUIPMENT

Sewerage and Sewage Treatment

Industrial-Waste Treatment

THE principles of industrial-waste treatment and its relation to stream pollution came in for close attention at the New Jersey Sewage Works Association annual meeting held recently in Trenton. A panel of planners, industrial representatives, and sanitary engineers jointly analyzed this problem.

Leading off the discussion was T. Ledyard Blakeman, Chief of the Bureau of Planning for New Jersey's Department of Economic Development. Mr. Blakeman emphasized his opinion that industrial-waste stream pollution hurts the desirability of New Jersey as a place to live and to work. He further expressed the thought that municipalities themselves could not and should not assume full obligation for treating these wastes.

First on the panel representing industry was William B. Hart, of the Atlantic Refining Company. While admitting that industry has not done much to correct stream pollution caused by industrial wastes, he at the same time protested vigorously against obscure, indefinite types of requirements that the industries are asked to meet. He asked that the requirements be translated into definite terms that industry can use in the knowledge that the treatment furnished will meet stream requirements. He estimated that industry is about a third of the way along in its abatement program and is making progress rapidly.

As a sanitary engineer, Dr. Harry Gehm, Technical Advisor of the National Council for Stream Improvement of the Pulp, Paper and Paperboard Industries, pointed out that all industries have a common interest in water supply. John G. Segelken, special representative of the Bell Telephone Laboratories, spoke and showed examples of the wide range of products under study in the Bell Laboratories, and the widely varying types of wastes that result from these studies. Nevertheless, he said, the Laboratories are willing to assume extra expense to prevent these wastes from being a stream-pollution hazard. The reason, he said, was not altruism. It was based on good business.

E. I. Merrill, plant engineer of the Johns-Manville Corporation, told how his company recovered wastes that normally would be discharged into the stream, and thereby brought about advantages to the manufacturing plant. Mr. B. W. Dickerson, engineer for the Hercules Powder Company, Inc., Wilmington, Del., expressed the opinion that a clean-up of streams will result in plenty of water for all, a vital industrial consideration, and would not entail a cost exceeding 10 to 20% of the total plant investment.

Summarizing the thoughts of the planner, engineer, and industrialist was Francis Friel, consulting engineer of the firm of Albright and Friel, Philadelphia, and past president of the Federation of Sewage Works Association. He pointed out that streams should be utilized to the fullest extent without causing difficulty either as a source of water supply or as a means of recreation. Nevertheless, he observed that industry unfortunately does not accept pollution abatement along with other normal housecleaning activities such as sweeping or scrap-gathering. Many times, he said, manufacturing processes may be modified to meet pollution-abatement needs.

New Brunswick's New Rental Charge

COMPLETING a step that makes the sewerage service in New Brunswick, N. J., self-supporting, this city recently adopted a sewer-rental charge based on the amount of water used. Chester C. Paulus, New Brunswick's Mayor, explained how the charge works, and outlined the steps leading up to its adoption, at the recent New Jersey Sewage Works Association annual meeting held in Trenton.

The rental ordinance followed a similar ordinance covering industrial wastes; however, this ordinance based the charge not only on the volume of sewage flow, but also on the character of the wastes themselves. (See THE AMERICAN CITY for April 1944.) Study of the sewerage situation led the Board of Commissioners to the conclusion that payment of operation and maintenance out of a property tax placed an unfair burden on property owners.

The rental charge adopted is paid quarterly. It calls for a charge of $1.00 per 1,000 cubic feet with a minimum charge of $2.50 a quarter, or $10.00 per year. If any water user does not discharge all the water received at the premises into the sewerage system, he may make application to the Director of Public Works for a separate meter with which to measure this amount of water.

Owners of property that does not use the city sewer do not have to pay a sewer rental.

Sewage Treatment Economies

WHEN the subject of operating economies came up at the recent New Jersey Sewage Works Association meeting held in Trenton, N. J., the Superintendent of the Tenafly plant, J. K. Adams, made these suggestions:

1. To keep leaks from occurring in the filtrate line leading from the vacuum filter, use Saran plastic pipe. Mr. Adams uses it successfully on filtrate with a pH as low as 3.0.

2. To cut the use of water in the chlorinator, use effluent from the treatment plant. Mr. Adams has two chlorinators served by a Westco pump. The use of the effluent has reduced water use between 50 and 75%. The machine, however, will require additional cleaning.

3. To prevent clogging in outlying pumping stations, protect them with a $\frac{3}{4}$-inch bar screen and inspect them daily.

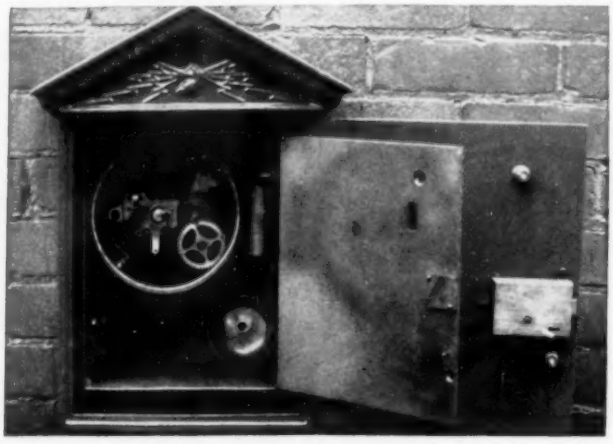
4. To realize an income from the sale of sludge, dry it by some method such as a Raymond Flash Dryer, used in his plant, and arrange to sell it to a fertilizer or plant-food company. Mr. Adams conditions his by this method and realizes an income of $4,000 annually, at $30 a ton. In addition, this feature has good public relations value. It brings many people to the plant who otherwise would never visit it.

Loadings at Decatur, Ill.

AT the Decatur, Ill., Sanitary District, Dr. W. D. Hatfield reports that his activated-sludge plant has operated satisfactorily at a loading of 43.1 pounds of BOD per 1,000 cubic feet of air, and that his trickling filters can take a load of 14.7 pounds per 1,000 cubic feet of filter media, or 642 pounds per acre foot. Occasionally, loadings of 72 pounds BOD per 1,000 cubic feet have been handled by the plant, using reaerations of return sludge, supplemented with supernatant liquor and digestion sludge. The filters also take loads of 18 to 20 pounds of BOD per 1,000 cubic feet for limited periods.

From the Illinois State Department of Health *Digester*.

WHY CITIES PREFER GAMEWELL



Replaced after 52 years service — Without repair during that period.

The service record of Box 14 is not an isolated instance; it is but one of many. Gamewell Fire Alarm Systems have demonstrated their durability and efficiency for nearly a century — which explains the universal preference for them. Expenditures for adequate fire alarm box distribution should be regarded not as expenses but as sound investments in public safety.

Obsolescence due to the production of later models of greater efficiency — not deterioration — is the principal cause of retirement from service of Gamewell boxes.

THE CUMBERLAND NEWS, CUMBERLAND, MD., TUESDAY, MARCH 2, 1948

Fire Alarm Box 14 Gets Honorable Discharge After 51 Years' Service

Original System Was Installed In 1896

Fire Alarm Box No. 14, which has stood on guard at the corner of Washington and Allegany Streets for more than half a century, received an honorable discharge yesterday.

Fire Chief Reid C. Hoenicka said that No. 14 was the last of the 12 original fire alarm boxes which were placed in operation here on October 27, 1896.

Chief Hoenicka assisted by Edgar F. Lible, maintenance electrician, and Walter Jenkins, general maintenance man, yesterday replaced the faithful alarm box with a modern mechanism similar to those used in the other 74 alarm boxes of this city.

Firemen said that No. 14 has never been repaired during its long service.

In the 40 Years Ago column of the September 22, 1936, paper appeared the following:

"The Gamewell Electric Fire Alarm and Telegraph Company, New York, accepted the contract for the erection of its system in Cumberland, as modified by the City Council and was to commence work at once."

THE MODERN BOX
THREE-FOLD TYPE

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

In Canada: Northern Electric Company, Ltd., Montreal

Teach Stores and Factories To Cover Stock and Machinery

By GEORGE W. BOOTH
Chief Engineer
National Board of Fire Underwriters
New York, N. Y.

MOST fire departments today have on hand waterproof covers, often spoken of as salvage covers or tarpaulins. Their use at fires is becoming very general, and thousands of dollars are thus saved to the citizen. Fire chiefs and firemen could use more of this protection against water damage if they could get storekeepers and factory managers to realize how a relatively small expenditure might prevent the occurrence of that large part of fire loss represented by the forced shutdown of operations.

Many stores cover counters each night, but these covers are primarily to prevent dust from collecting and injuring material. A waterproof cover would serve the same purpose, and in addition would protect it from water in case of leakage at the time of a fire in the upper stories.

Expensive machinery is also often protected against dust and dirt, but no regard is given to the probability of water damage, which might be extremely serious. Even where operation is continuous, it might be well to store four to twelve standard salvage covers in a convenient cabinet and use them to cover the machinery during a fire. Covers of this kind are particularly useful with spinning and weaving machinery, printing presses, and other kinds of automatic machinery.

In this connection it is well to remember that even concrete floors are seldom waterproof, and in multiple-occupancy buildings heavy water damage may occur in lower floors not involved in the fire.

The value of salvage work depends upon the quality of the cover. Most of those in service are made of treated cotton duck as covered by the following specifications.

Specifications for Cotton Duck Covers

Size: Either 12 by 18 or 14 by 18 feet, tolerance 3 inches plus, or 2 inches minus, in either width or length, or both. Cloth to be of clean cotton duck, free of knots, dropped threads, or other weaving imperfections.

Treated Cotton Duck Cover: Fabric to weigh not less than 11 ounces per square yard before waterproofing, and not more than 20 ounces per square yard after waterproofing; to be treated with a preparation that will produce a waterproof condition capable of withstanding tests hereinafter specified; the treatment to be such that the covers will neither mildew, stiffen in cold weather, nor stick in the heat.

Although the roof of this building was badly damaged by fire, the merchandise on the lower floors was protected from rain and snow because it was covered with waterproof covers at the time of the fire.

Seams to be not more than two in number, and each seam to be sewed with two lines of stitches on a lockstitch machine with rot-proofed and waterproofed thread. All seams to measure from ¾ to 1 inch between lines of stitches, and to be of the "roll" type with edges turned under, and so treated as to prevent leakage at that point, as provided for in the tests hereinafter specified.

All edges shall be hemmed by turning under 1½ inches of goods, so as to make three thicknesses of goods all around the edge of the cover.

All edges shall be hemmed by turning back the fabric on itself for a distance of 1¼ inches and cementing in place.

Grommets: The 12-by-18-foot cover shall have 24 No. 3 spur brass grommets spaced two at each corner, five at each side, and three at each end. The 14-by-18-foot size shall have 32 of these grommets, spaced two at each corner, seven at each side, and five at each end.

Grommet Reinforcements: All corners to be reinforced on the under side of cover with a 7½-inch triangular piece of the same material as that used in the body of the cover so as to provide three thicknesses of goods for corner grommets.

Stencil: Covers are to be stenciled with the month, day, and year on two opposite corners in 3-inch letters. Eight-inch letters designating the organization, such as "Fire Department," "Fire Patrol," at the direction of the purchaser, to be placed at opposite corners.

Tests: Not less than 20% of all deliveries to be tested as follows:

Covers to be picked at random and placed in a test rack, and there subjected to a depth of 5 inches of water over the seam for a period of four hours. No drop shall appear in the fabric, and leakage in excess of ¼ ounce of water at the seam during the test period shall be cause for rejection. If one cover fails, all covers in the assignment shall be tested.

Warranty: The contractor shall warrant all covers furnished under these specifications to be waterproof and to meet the test requirements, and shall agree to replace any cover which, within a period of 13 months after the month and year indicated by the corner stencil, develops defects resulting from imperfections in manufacture or waterproofing.

Time for a Breather

Perhaps you have forgotten such things, Mr. P. A., but isn't it time you gave some special attention to your rod and reel, your garden and your golf game. Yes, the vacation season is well under way, and if you're going to wander in the wide open spaces—better begin thinking about it.

We know you are having a tough time. Steel buying, like steel supplying, is no easy task these days. But a little rest now will pay off in new energy and a new outlook on your return.

While you're away, please know that we'll be doing everything we can to give your company prompt service on steel. With demand so heavy there may be times when we cannot meet all requirements. But you can be sure your associates will receive all possible cooperation from the nearby Ryerson plant, as you would yourself.

So break away soon for that grand and glorious vacation. You owe it to yourself, your family and your company. Joseph T. Ryerson & Son, Inc.

RYERSON STEEL

Street Cleaning and Refuse Disposal

Miami Beach Refuse Costs

LAST summer City Engineer Morris N. Lipp made a study of Miami Beach refuse-collection costs. He came up with figures that cover labor, equipment, and incineration, as shown below.

Unskilled labor is paid at the rate of $1.02 to $1.25 per hour, and truck drivers receive $1.39. Restaurants and hotels are given daily service and apartment houses and residences receive service three times a week. Before the war, Miami Beach paid the City of Miami $1.50 per ton for incineration.

Since these observations were made during the off-season summer period, costs would be somewhat lower for an average, Engineer Lipp feels.

Miami Beach disposes of its refuse in the Miami incinerator approximately nine miles from the center of the city. Engineer Lipp uses a shuttle system whereby a loaded truck goes to the city shop and then is taken by another driver to the incinerator. The relieved driver picks up an empty truck and returns to the collection route. Miami Beach pays Miami $3.00 per ton for this service.

	Cost Per Ton	*Cost Per Can*	*Weight Per Can*
Congested Apartment House Area	$ 7.70	$.09	24 lbs.
Moderate Apartment House Area	10.33	.14	26 "
Combined Residential and Apartment House Area	11.50	.113	20 "
Residential Area A	12.41	.10	17 "
Residential Area B	13.00	.14	22 "
Restaurant Swill	6.50	.25	80 "
Business Alleys	9.90	.12	27 "

What's Wrong At Woonsocket?

PLENTY, says the Woonsocket Taxpayers' Association. Part of the trouble is caused by the refuse collectors and part by the indifference of the public. The Association pointed out these problems in a recent leaflet distributed to the public.

Collectors, the Association insists, should be more careful. At times they make little effort to put the ashes and rubbish in the truck neatly. As a result, some blows away or drops back to the sidewalk. Furthermore, the collector makes little effort to replace the container on the sidewalk. Often he drops it from the top of the truck and allows it to remain where it falls.

Residents are also often indifferent. Some pack the containers so full that the refuse spills over the sides. Frequently, occupants pile rubbish and ashes into poor containers, and as a result the contents overflow into the roadway. Again, the collection crews often are forced to handle containers much too large or much too heavy for lifting by the average crew.

The responsibility of collecting and disposing of garbage is assigned to the Woonsocket Board of Health. Regulations exist requiring the separation of garbage from ashes and rubbish. Collections are made from all city residences free of charge. Commercial establishments must make their own arrangements.

The city's contract with the private collector that performs this service calls for the collection and disposal of all garbage except from hotels and restaurants. It also states that the contractor shall not assign any part of his contract without authorization from the Board of Health. The Taxpayers' Association has found no record authorizing such an assignment. Yet it states that in certain sections of the city the garbage is collected by persons other than the contractor. These collections are not made regularly, and at certain periods of the year none is made.

Among the specifications listed for collection and disposal is one stating that the contractor shall use watertight, closely covered vehicles approved by the Board of Health.

The fact is, states the Taxpayers' Association, that trucks are *not* closely covered. Investigation has shown that most of the time there is no cover at all, and they are far from watertight.

For the collection and disposal of garbage, the city pays, under a five-year contract, $16,000 annually. For the collection and disposal of other refuse the city pays $27,900 annually. The contractors estimate that rubbish collections average 800 cubic yards per week and garbage collections average 75 tons a week.

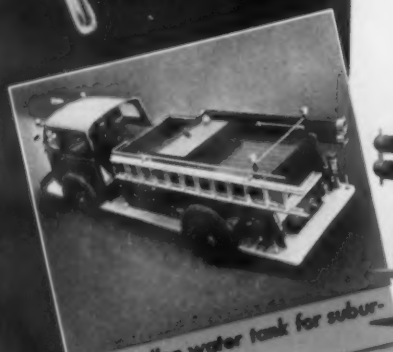
How Fort Worth Flushes the Sidewalks

Twenty-five feet of 1½-inch hose attached to an Etnyre street flusher constitute the basic equipment needed to keep Fort Worth, Texas, sidewalks flushed clean on a three-nights-a-week basis. The flusher supplies water through the hose at at 40 pounds' pressure.

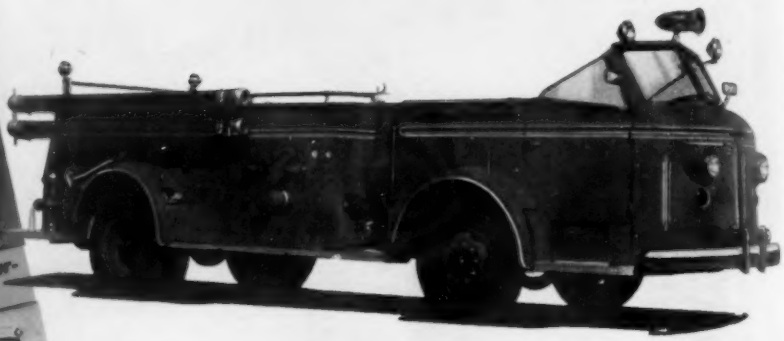
WATER WATER EVERYWHERE

WHEN YOU NEED IT!

WITH AMERICAN-LAFRANCE



750 gallon water tank for suburban or rural service



500 gallon water tank, 750 feet 2½" hose, or 1500 feet 1½" hose

From water tank, draft, or hydrant,
American LaFrance pumpers really *deliver.*
Water tanks of corrosion resisting alloy iron
are available in capacities that meet
the needs of *your* community—ample
space for your hose and equipment, too!

THE TRADEMARK OF *Leadership*

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AMERICAN-LAFRANCE-FOAMITE CORPORATION
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LAFRANCE FIRE ENGINE—FOAMITE LIMITED
TORONTO, 9, ONTARIO, CANADA

Denver Spreads Her Wings

Denver's Stapleton Field ranks high in traffic handled and in size of field.

DENVER'S municipally owned Stapleton Airfield, fifth largest in the United States, and eighteenth largest from the standpoint of traffic handled, has an improvement program under way amounting to nearly two million dollars.

According to Airport Director Charles J. Lowen, the airport will spend a million and a half dollars "in front of the fence." Two new runways will parallel the old ones. The one paralleling the north-south runway will be 7,000 feet long, and the other, beside the old east-west runways, will measure 8,500 feet. Stapleton will then take its place among the airports in the United States equipped with dual runways.

In addition, the airport will have a small airpark at the north end of the field. The entire area is to be landscaped. Of the outlying land owned by the field, 950 acres have been planted to wheat, which under present market conditions will mean a nice profit to the port.

That portion of the airfield located "behind the fence" will see $345,000 spent on it to improve facilities. The main building has been enlarged and enclosed, with huge plate-glass windows on two sides, and the entire interior has been refurnished.

Planned for the airport is a superservice station designed to serve automobiles as well as aircraft. A spacious restaurant will be built with a cocktail bar, lobby space, extra ticket facilities, powder and rest rooms.

To operate and maintain the airport, Director Lowen uses two pick-up trucks, three dump trucks, one American Patrol Grader, one Huber Maintainer, one Clark Lift, one Cletrac tractor, one Oshkosh truck with a snowplow, one sweeper, one broom, one Snogo, one Austin grader, a Galion grader, and a wobble-wheel roller.

The City Fire Department has, in addition to two extinguishers at each gate, two fire trucks and one crash truck, with crews available at all hours. The Denver Fire Department plans to supply a new crash truck equipped with a 500-gallon high-pressure pump.

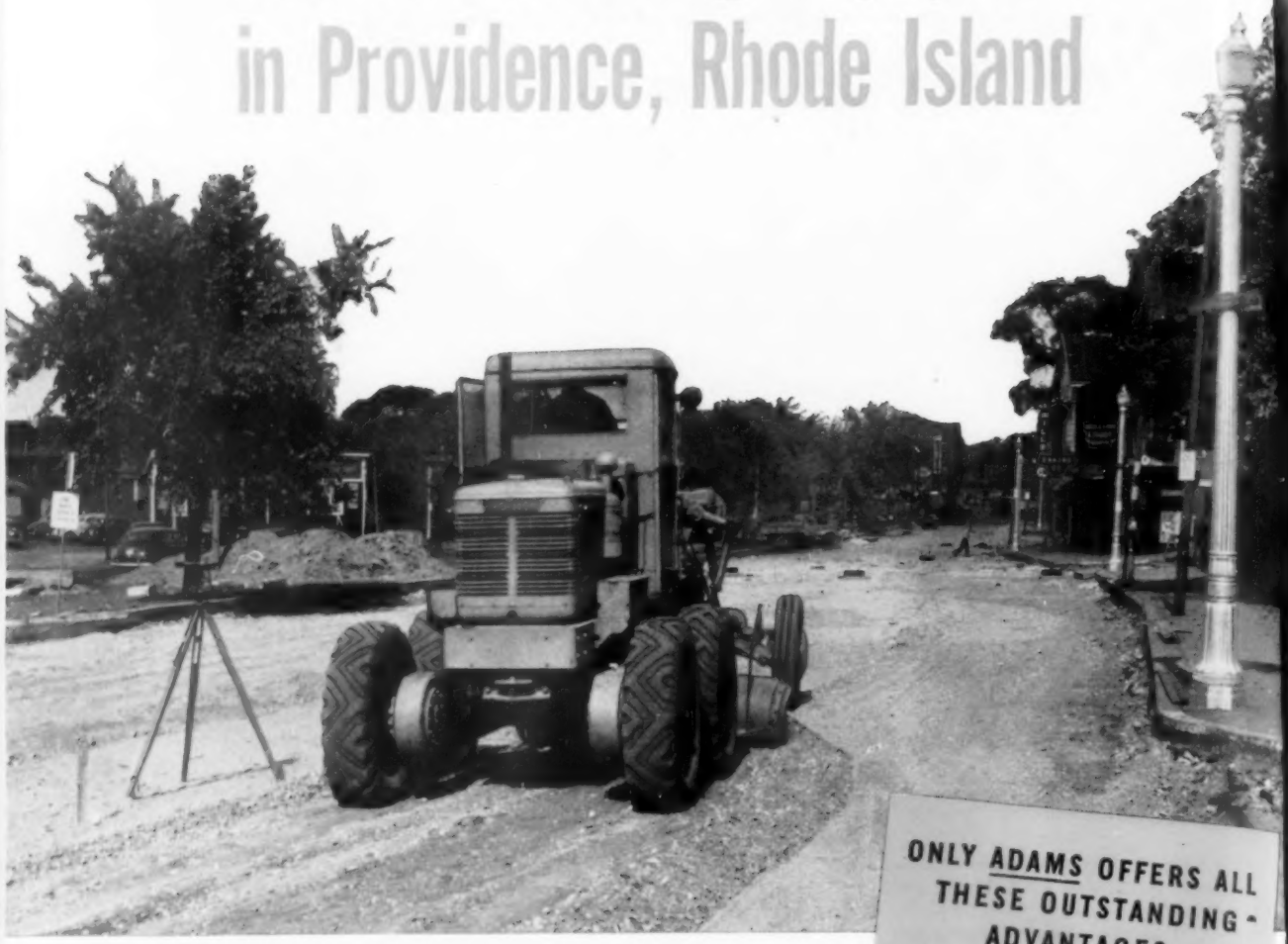
Air Marking Program

CITIES will be better marked for the wandering airport pilot in the future if the present program being supported by the U. S. Chamber of Commerce develops as it is expected. A recent release asks local chambers of commerce to assume leadership in the community air marking projects. Markings conform to those offered by the Civil Aeronautics Administration.

The Chamber of Commerce expects to draw on the assistance of local Boy Scout organizations in the program. It also suggests a local sponsoring agency to supply the funds, totaling $20 to $25. Instructions for laying out and painting the markers, and an approved form to be used in obtaining permission to use the space selected, are given in the CAA *Air Marker Guide*, obtained from the CAA, Washington, D. C.

A standard airmarker installed in a town consists of the name of the town, the latitude and longitude separated by a true-north arrow, and an airport directional symbol, the circle, showing the distance to the nearest usable airport.

Adams advantages pay off in Providence, Rhode Island



From the wide-open spaces of the Southwest to historic New England, you'll find Adams Motor Graders at work building, rebuilding and maintaining streets in countless cities.

The Adams Motor Grader shown above is helping to rebuild the main artery linking Providence and Pawtucket, R. I. On this job the Adams handled much of the precision work—such as original sub-grading—cutting of grade proper—final spreading of fill material to specifications.

Adams Motor Graders "shine" on precision work of this type. Their power-operated mechanical controls provide fast, accurate blade and scarifier adjustments—built-in rigidity holds blade and scarifier solidly in place—perfectly balanced weight distribution assures always-ample pressures for forcing blade and scarifier into hard materials.

Let your local dealer explain how Adams Motor Graders can speed street operations and reduce costs in your city.

J. D. ADAMS MANUFACTURING CO. • INDIANAPOLIS, INDIANA

ONLY ADAMS OFFERS ALL THESE OUTSTANDING ADVANTAGES

- 8 Overlapping Forward Speeds
- High-Arch Front Axle for Clearance
- Push-Button Starting from Cab
- Positive Mechanical Controls
- Wide Range of Blade Adjustments
- Exceptional Blade Clearance in All Operating Positions
- Balanced Weight Distribution
- Easy Access for Fast Servicing
- World-Wide Dealer Service

Adams

MOTOR GRADERS • LEANING WHEEL GRADERS • ELEVATING GRADERS

Street Construction & Maintenance

Asphalt Cure For Soil-Cement

RAPID-curing asphalt, RC-2, was presented as an improved method of curing soil-cement paving bases at the American Road Builders Association's Soil-Cement committee meeting held in Washington, D. C., recently. The suggestion was made by T. F. Loughborough, Construction Engineer of the Virginia Department of Highways. On the basis of work done there, it supplanted the practice of using moist hay and straw.

Some Details of New Method

The practice was first to give the soil-cement base an application of water. As soon as the free water disappeared from the surface, RC-2 was applied. The water in the soil-cement prevents the detrimental penetration of the bituminous material, and at the same time aids in the adhesion of the RC-2 to the soil-cement. When it is necessary to use the newly constructed soil-cement at once, the pick-up of the bituminous material is overcome by blotting it with an application of sand or stone chips. It is then possible to follow the material with the bituminous cover, should the contractor desire to do so.

Committee members also expressed interest in the Harnischfeger machine, a device that is reported able to stabilize both the soil and cement in a single pass.

Inset: What salt water tidal action and alternate freezing and thawing did in a few years to precast concrete piles under the Bass River Bridge near Yarmouth, Mass. Large picture: The same bridge after "boots" were installed.

Boots for the Bridges

PROTECTIVE "boots" of wrought iron plate have been installed on badly spalled pre-cast concrete piles of two Massachusetts bridges to prevent further damage from salt-water tidal action.

Rising and falling of tides, plus alternate freezing and thawing and abrasive action of floating objects had so spalled the piles that on a few of them more than half the cross sections were deteriorated. One bridge had 10 years of service. The other had had 13 years.

The "boots" for 90 miles of these bridges were fabricated of ¼-inch wrought-iron plate 6 feet long. The plates were bolted together, forming a 22-inch-by-22-inch shield. After installation during low tide, they were backfilled with concrete. Wrought iron was selected for its ability to withstand salt corrosion.

Miami Beach Bridge Repair

Salt air and other deteriorating factors left certain of Miami Beach, Fla., bridges in this sort of shape.

To correct it, City Engineer M. N. Lipp brought in a Gunite crew that refaced the exposed beams.

PROTECT YOUR DRILLS AGAINST RUST AND WEAR

Texaco Rock Drill Lubricants EP help you drill more footage at lower cost

TEXACO *Rock Drill Lubricants EP* are "extreme pressure" lubricants, made to protect moving parts under the most severe conditions . . . and to prevent the formation of rust whether your drills are running or idle.

For added protection, *Texaco Rock Drill Lubricants EP* are made to stay fluid at low temperatures . . . to resist washoff . . . to keep parts free of gum and carbon formations. Drill doctors everywhere say they're the best assurance of trouble-free operation, longer drill life, lower maintenance costs.

Texaco Rock Drill Lubricants EP meet the specifications of leading rock drill manufacturers. Use the viscosities recommended for your particular drills and operating conditions.

To assure efficient compressor operation . . . to keep valves clean, rings free and air lines clear . . . use the recommended *Texaco Cetus, Alcaid or Algol Oil.*

A Texaco Lubrication Engineer will gladly advise you. Just call the nearest of the more than 2500 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

NEW! "Lubrication of Air Drills and Compressors" — a profusely illustrated, 32-page book describing in great detail the lubrication requirements of air compressors and air drills. Send for your free copy today.

TEXACO

TEXACO Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

Tune in . . . Texaco Star Theatre every Wednesday night featuring Gordon MacRae and Evelyn Knight . . . ABC Network

volume XLIII No. 6
JUNE 1948
The American City

Financing Kansas City's Parks

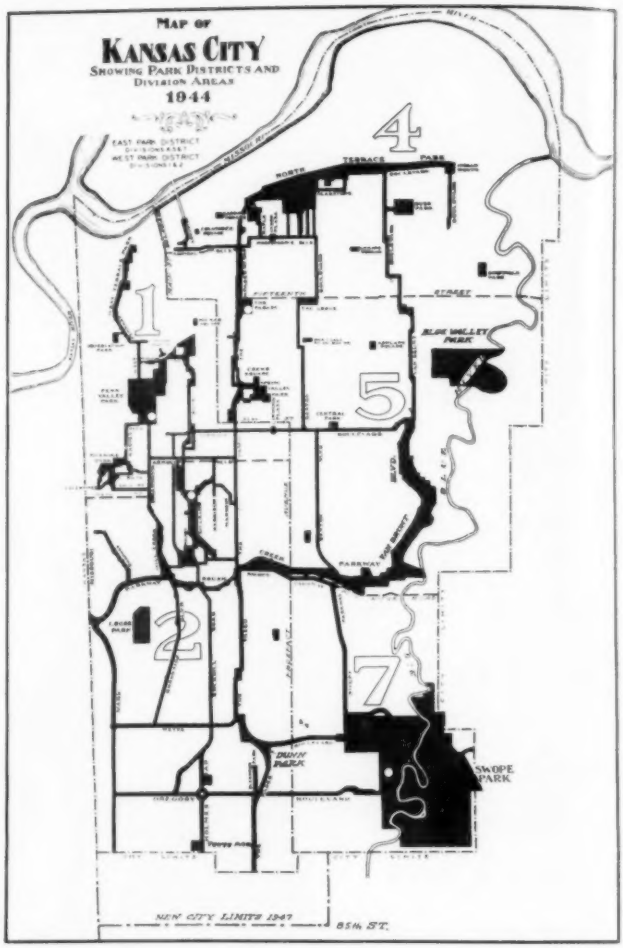
Special assessments on property benefited prove desirable method of acquiring neighborhood recreation areas

By L. P. COOKINGHAM
City Manager
Kansas City, Mo.

An archway of trees along one of Kansas City's boulevards.

KANSAS CITY'S park and boulevard system—first planned more than half a century ago—has contributed much to the city's development as a better place in which to live and work. The financing of this system includes maintenance and improvement of existing park property, and also the acquisition of new land. Most of the revenues received by the Park Department — according to Kansas City's charter—are to be used only for the first of these two, that is, maintenance and improvement of parks and boulevards, since in Kansas City both are under control of the Board of Park Commissioners appointed by the Mayor. These revenues come from a 2½-mill general property tax on land only, a special tax of 10 cents a front foot along boulevards, 10% of the city's cigarette tax, motor-vehicle license taxes and certain other licenses and concession fees for business operations on park property. For the acquisition of new land, gifts may be accepted, and additional land has in some notable instances in the city's history been obtained by this means. Outstanding among gifts was that of Swope Park—one of America's largest metropolitan park areas—with adequate room within its 1,400 spacious acres for a zoo, swimming pools, golf courses, and bridle paths.

For the acquisition of parks and boulevards other than by gifts, two methods have been followed in Kansas City. Each of these methods is related to the area to be served. Thus, some park property to serve the city as a whole has been financed by general obligation bonds voted by the taxpayers. However, a relatively small amount of such property has been acquired by bonds, although construction of boulevards and park developments with city-wide appeal have been financed by bond money in a number of instances. For the acquisition of park property to serve local areas—such as neighborhood playgrounds and playfields — a special method of financing has been developed and widely used in Kansas



Distribution of Kansas City's parks in 1893 (above) and at present right).

City. This is through (1) the condemnation of the land needed, and (2) the assessment of property owners within an adjacent benefit district. The procedure at present is for the City Council to fix the limits of this benefit district upon recommendation of the Park Board. A jury, called by a judge of the Circuit Court, determines what the land is worth, and distributes the assessments over the district. The city pays for the land outright, and property owners are then given from four to ten years to reimburse the city through the payment of special assessments, levied on the basis determined by the condemnation jury.

Method Used Since 1895

This method has been in more or less constant use since 1895, when the voters adopted a charter amendment permitting the city to acquire land for park purposes by condemnation. The method was instituted at a time when Kansas City had just voted more than $3,000,000 in bonds for the purchase of the water system. There was therefore no possibility of further regular bond issues at that time. Neither were funds available to the Park Department from general revenues or general taxation for the acquisition of park or boulevard property. Long-range plans, however, had been made by an active and public-spirited Park Board — a board serving entirely without remuneration, as has always been the case in Kansas City.

In accordance with these plans, the city was divided into park districts; certain areas were selected for development as parks and as boulevards to connect the parks, thus establishing a principle that they should together make a complete circuit of the city. Upon recommendation of the Park Board, the City Council adopted an ordinance authorizing the acquisition of these lands; condemnation proceedings were instituted through the Circuit Court, benefit districts set up, and assessments made in much the same way as today. Assessments could be paid at once or in annual installments over a 20-year period if the owner desired. Park Fund Certificates were issued and sold in the meanwhile to obtain the balance unpaid by property owners. These certificates did not become obligations of the city, although the city treasurer did act as a trustee for their collection and disbursement.

As a result of this method of acquiring land, much of the city's present area was planned and provided with parks and boulevards while still very sparsely settled. This procedure has resulted in preserving numerous open spaces distributed throughout all parts of the city, and in providing areas which in time have developed into places of beauty. Penn Valley Park — situated between home and downtown for thousands—invariably causes comment by visitors to the city. This park, providing 172 acres of greenery, and including a part of the old Santa Fe Trail, borders closely on the business district. In 1900, a large portion of Penn Valley Park was acquired through condemnation and assessment of property owners. Purchase of the land and the removal of some 300 buildings, mostly dilapidated, required nearly a million dollars. Thus the policy of acquiring park property by condemnation and special assessments was begun in an early day. As the result, a far more extensive park and boulevard system has been developed than would otherwise have been possible. This has not only added to the city's beauty: it has also protected residential values in a number of sections. Today Kansas City has over 4,000 acres in park land, including more than 118 miles of paved boule-

yards. Aside from gifts, over 90% of all park property has been acquired by the condemnation and special assessments plan. Considering boulevards alone, approximately 99% have been obtained by this plan.

This plan is well known to the citizens of Kansas City. In many instances they have taken the initiative by petitioning the City Council or Park Board to acquire park land by this means. In one such case currently being considered, property owners in a newly annexed portion of the city have requested the municipal government to purchase a large building for use as a community center. The people themselves have volunteered to pay, through special assessments, for the 20 acres adjoining to be used for park and play purposes. In some other instances, whole neighborhoods have been polled before starting condemnation proceedings for the acquisition of playfields and playgrounds.

For citizens of Kansas City to make known their needs and desires along these lines is not of recent origin: as far back as 1902, property owners urged the acquisition of the rugged and hilly area which has since become Roanoke Park. Within recent years, however, more satisfactory methods have been developed for the expression of community or neighborhood opinion, whether on questions related to park land or to other matters. Throughout the city, neighborhood "community councils" have been established, made up of representatives from clubs, schools, churches, and other civic bodies within a given locality. Each of the areas served by a community council roughly approximates one of the city's high-school districts.

"Coordinators" Available to Community Councils

These councils are organized and controlled locally, but are offered a chance to become acquainted with and make use of departments in the city government through the services of a "coordinator." These coordinators, who act in an advisory capacity only and have no vote in the community councils, function under the Community Service division of the city's Welfare Department. Discussion regarding parks and playgrounds has been a natural topic within the community councils, and action a natural development. Land for at least three large playgrounds was recently purchased by the condemnation and special-assessment plan, as a direct result of petitions circulated by these councils and presented to the Park Board by them. In another case, two requests came to the City Hall for development of two playground sites only five blocks apart. Through the community council in the section of the city concerned, a satisfactory compromise was achieved. In this instance —as in many others—the problem became one for the neighborhood itself to work out as a first step. The city government was then better able to serve the needs of the whole neighborhood in a logical and orderly manner.

Recent Acquisitions Fit Into Master Plan

Four local playfields in different parts of Kansas City have been acquired through special assessments within the last three years. Two other park areas, in widely separated sections, and the extension of an important boulevard are currently under condemnation. The possibilities offered by these park areas are numerous—whether for play facilities, such as baseball diamonds or tennis courts, supervised by the Recreation Division of the Welfare Department, or for grassy slopes where families in the neighborhood may relax on summer evenings. Whatever the final uses of these new lands, Park Department tradition dictates that they contribute to the enjoyment of Kansas citizens and to the beauty of their surroundings.

Since the completion of the city's Master Plan, every effort is made to coordinate the plans for acquisition of neighborhood parks and playgrounds with the over-all recreation plan for each neighborhood as proposed in the Master Plan. In such a plan, the city has been divided into a series of neighborhoods called "living areas of similarity," and for each area a playground or playfield site has been tentatively selected. As the desires of a neighborhood for a recreation area are made known to the Park Board or the City Council, the Master Plan is consulted and the site recommended which most nearly meshes with the over-all plan for the city.

For More Flexible Subdivision Standards

By SCOTT BAGBY
City Planning Consultant
Montclair, N. J.

MOST of our progressive cities have realized that they cannot afford to allow irresponsible new land subdivision. Most of them require the developer to pay for all improvements. Most of them have drawn up excellent platting rules.

A single, rigid set of platting rules, however, ignores today's basic cost factors. Vacant property within several miles of any urban area is subject to new subdivision at any time. The land furthest out is usually cheaper than the land closer in. When installation of streets, curbs, sewers, and sidewalks is required, the cold economics of subdivisions force the developer to recoup his costs in outlying small-lot subdivision.

The smaller the lots the more they will need urban services. The further out the lots, the more expensive urban services will be. A vicious circle is formed, increasing taxes on the existing development and at the same time making it less profitable to replace central blighted areas which are also forcing increased tax charges.

Modern planning can determine the area needed for a reasonable urban population growth. It can determine the areas into which existing services can most easily and economically be further utilized or safely extended.

Once this is done, and an urban "fence" soundly established, urban services should be limited to this area. There will, and should be, development beyond the service area, but such development must be of a character which will not force future service extensions.

The accepted theory is to limit small-lot subdivision to the primary service area, require medium-lot subdivision adjacent to that area, and require acreage subdivision beyond. This theory will not produce results until we can provide developers with a profit motive.

The new comprehensive plan recently prepared for Morris Plains, N. J., balances all these factors. It requires in its zoning that small lots be limited to its most economically serviced area, and that the remainder of the Borough be developed with lots of at least 18,000 square feet. This is supplemented by new subdivision rules which require the developer to install full improvements in small-lot subdivision, moderated improvements in medium-lot subdivision of over 18,000-square-foot lot areas, and minimum improvements in acreage subdivision.

A single standard for all subdivision would either seriously decrease land values in the outer area or the zoning regulations would be held unreasonable by the courts. By recognizing the desirability of different types of subdivision and making it financially attractive to both developer and land owner, our urban areas can change the vitally needed control-of-service-areas theory into workable everyday practice.

Adult-Mosquito Control

It is not always possible to kill mosquitoes in the larval stage. This article tells how to handle them when they are grown and flying

MOSQUITO control, as commonly practiced in the United States, has been directed at the breeding place. Waters capable of breeding mosquitoes have been subject to drainage or the application of larvicides designed to destroy the larvae or pupae. This method of control is based on the fact that during the development stages mosquitoes are aquatic, therefore concentrated. The adults of many species of mosquitoes have long flight ranges which have heretofore made adult control impractical.

In most cases, control based on drainage and larviciding is still the most economical method of mosquito elimination. Experience has indicated, however, that the effectiveness of such methods are often lessened by adverse weather conditions, tides, or other factors beyond the control or financial ability of the control agency. The resulting mosquito flights often cause a severe temporary annoyance. When the mosquito-breeding potential is so extensive that the usual methods of control are financially impractical, great hardship may be inflicted on those residing within flight range of the breeding areas.

DDT and Rhothane

The development of DDT as a mosquito insecticide by the U. S. Department of Agriculture during the war emergency; Rhothane by Rohm & Haas Company (similar to DDT but less toxic to fish); and the consequent manufacture of industrial means of application have provided mosquito-control workers with new tools that make practical the control of adult mosquitoes over wide areas at costs within reach of many communities. Furthermore, mosquito-control agencies may now use these modern methods of adult control to supplement the more economical basic-control methods.

Adult-mosquito control is based on the application of DDT or Rhothane in 1 to 5% oil solutions or water emulsions at rates ranging from 2 quarts to several gallons per acre in the form of aerosols, fogs or mists. The formulation of the insecticide, the rate and place of application, and the equipment to be used are tasks for experts if the costs are to be kept within reason, full benefits are to be obtained, and damage to wild life, vegetation and useful insects is to be avoided.

Survey Required

Before undertaking any adult-mosquito-control program authorities should conduct a survey to determine the species of mosquitoes responsible for the annoyance, the source of mosquito emergence, and the natural and physical factors surrounding the problem. The species of mosquitoes causing the annoyance is important as the knowledge of its life history will determine the type of control to be applied. The breeding place should be located, for in many cases the adult mosquitoes can be killed while resting around the breeding place before flights and resultant spreading-out can take place. The presence of fish, apiaries, certain species of nursery plants, prevailing winds at dawn and dusk, and the general terrain will have much to do with the planning of the operation.

Be sure to use caution with DDT and similar war-developed chemicals that have not had the usual long period of industrial testing. They must be treated as poison. Over-application may easily result in damage to fish, wild life, vegetation, and human health. Before embarking on a community program on private property, obtain legal authorization and insurance coverage.

Equipment

The equipment designed to apply insecticides for adult-mosquito control consists of aircraft, aerosol generators such as the Hession Microsol, fog applicators such as the Todd, the Beskil, or the Potts, and mist applicators such

A helicopter applying DDT over a swampy shoreline.

PHOTO COURTESY OF S. MATTHEWS

A DDT sprayer in operation in Morris County, N. J.

—An Emergency Tool

By ROBERT L. VANNOTE, *Secretary*
Passaic Valley Mosquito Control Conference
Morris Plains, N. J.

as the Bean Roto Mist-Duster, the Buffalo Turbine, or the Lawrence Aero-Mist Sprayer.

The airplane and the helicopter are ideal for the treatment of large open areas for adult-mosquito control, particularly over areas where ground equipment cannot operate. By the proper application of aerial sprays, mosquito broods may be cut off at the breeding place or the pressure of a migration may be relieved, thereby making aerosol or fog treatments effective during the period the fresh adult mosquitoes retain their migratory urge. Costs for this type of control vary from 75 cents to $2 per acre, depending on the skill of the pilot, the facility for loading, and the location of the landing field in respect to the area to be treated. The brochure published by the American Mosquito Control Association, New Brunswick, N. J., entitled "The Application of DDT by Aircraft for Mosquito Control," is a useful guide for those interested in this type of activity.

The Hession Microsol Generator, shown at the left, is an important tool, as its output of aerosol may be adjusted to particle sizes ranging from 10- to 75-micron diameters, discharging from 1 to 180 gallons per hour. In areas such as fair grounds, stadiums, and open parks, or in field or brush areas, this unit will not only kill adult mosquitoes within range of its output, but will set up a residual action effective for several days. Its discharge is less affected by thermal currents than the fog applicators and its operation is, therefore, not necessarily an overtime labor problem. Owing to the extreme caution required in its operation in and around residential areas because of possible spotting by over-treatment, this unit is essentially a field applicator.

Where to Use Fog Applicators

The fog applicators are characterized by their dry output, making their operation safe in residential areas where residual action is not advisable. Experience with the Todd insecticidal fog applicator indicates that excellent flash-kill of adult mosquitoes may be obtained using 5% DDT in diesel oil or Socony fog oil applied at the rate of approximately 15 gallons per hour at an average rate of travel of 3 miles per hour over residential streets. Costs range from 12 to 15 dollars per hour, depending on the output and labor required. The successful operation of the fog machine depends on the mosquitoes remaining fixed in position, as its effects are purely flash or contact in nature. Small practical results are secured when broods are in flight or when ground temperatures exceed air temperatures 4 or 5 feet above the ground. The effects of thermal currents make the fog applicators an overtime tool, necessitating its operation at night except on cool, overcast days.

The Beskil unit is similar to the Todd in its operation problems. The Potts unit is a light-weight, portable applicator, particularly useful on small estates where operations are limited in scope. It is seldom that the discharge of a fog applicator will be effective more than 300 feet from the nozzle. In planning a community program, the route should be laid out cross-wind with the discharge pointed in the direction of the wind. This will ensure maximum coverage. Precautions should be exercised to prevent traffic blocks due to the fog, and children should be discouraged from running in and out of the fog. Advance publicity should inform the residents of the area of the purpose of the application and of the dry, harmless nature of the fog.

The mist applicators were designed primarily for agricultural or tree treatments. In some communities they serve a dual purpose in an effort to control mosquitoes. As the discharge of these units consists of particle sizes beyond the aerosol range, great care must be exercised to prevent over-application, which will result in spotting, staining and possible damage to ornamental plants. In most cases the operators are not trained to appreciate the complicated problems involved.

It is, therefore, evident that several new tools have been introduced in the mosquito-control kit. These tools and the methods of their operation for safe and economical use require a background of technical experience. Each tool has its own specialized field dependent on the characteristics of its output. The proper tool in the hands of a trained operator will reduce adult-mosquito annoyance to the satisfaction of the public, thus serving as an emergency measure when normal controls fail due to abnormal weather. In areas where the costs of normal control prohibit usual mosquito control practices, great relief may be had by the use of the proper combination of aircraft and ground equipment.

Local Governments Can Help Stop Inflation

BEARDSLEY RUML, speaking at the sixteenth annual meeting of the Citizens Budget Commission of New York, on April 19, declared that local governments throughout the United States have a vital part to play in protection against inflation.

"This part," said Mr. Ruml, "is the promotion of efficiency and the elimination of waste all along the line. Fortunately, we do not need to undertake an 'austerity' program such as had been deemed necessary in some other countries. But, on the other hand, the demands on our productivity and natural resources are very great—for national defense, for the restoration of productivity in war-shattered lands, for investment in the development of under-developed countries, and for progressive increase in the standard of living of our own people. If, as a nation, we are to make an appropriate contribution to these good purposes, we cannot afford waste and we must strive for the highest efficiency in the municipal activities and programs we have decided should be undertaken.

"There is a spiral process in the matter of efficiency . . . spiral up and spiral down. Fair pay, good working conditions, respect for the worker and his job, all up and down the line, make for greater competence and greater efficiency; and these operating in a spiral manner again make possible better pay, better working conditions and higher appreciation of a necessary job well done. The same process applies destructively in reverse."

Albany, Ga., Chooses Soil-Cement

By C. O. WRIGHT
City Manager

THE rapid growth of Albany, Ga., is surpassed only by its progressiveness, particularly in matters involving civic pride.

Evidence to sustain this contention may be found in the residents' eagerness to countenance street-improvement programs over the period of 24 years that I have been city manager. At present there are 27 miles of paved streets, with 3¼ additional miles approved for construction during 1948. This mileage may be increased before the end of the year, however, for property owners are being advised to circulate petitions for additional paving on a per-front-foot assessment basis.

Program in Third Year

We are now engaged in the construction of soil-cement streets, having successfully concluded a small program in 1946 and a much more substantial one in 1947.

The choice of the soil-cement-base type of paving was predicated on three factors—prior knowledge of its use as a base, economy, and speed. We had become acquainted with soil-cement possibilities when the U. S. Army placed a soil-cement base on its Turner Field Airport, and when we repeatedly encountered difficulty acquiring sand-clay and had the disadvantage of a double haul, we decided to investigate the advisability of placing soil cement on Albany's streets. Engineers reported that the sandy-clay formations would require approximately 8 to 10% cement by volume to produce a durable all-weather base.

A typical sieve analysis of the existing soil ran as follows:

#4 to 10	1%
2.0 to 0.25 mm.	37%
0.25 to 0.05 mm.	37%
0.05 to 0.005 mm.	10%
0.005 to 0.000 mm.	15%

In texture it was a sandy loam, reddish brown in color. It consisted of 70% soil from the street and 30% borrow material. The P. I. was 15 and the USPRA soil group was A-2. Cement blended with this soil produced a mix that provided a base weighing approximately 120 pounds per cubic foot.

Less Street Blockading

Another very important contributing factor that influenced the decision was the necessity, formerly, of blockading a street under construction for long periods of time. Frequently on sand-clay construction we were compelled to set up the work as many as three times, principally because we attempted construction under traffic. We were familiar enough with soil-cement to know that a street under construction could be held open to emergency traffic at all times, and was available to light traffic on the next day after processing of natural soils with cement.

There were two economical factors responsible for the choice of soil-cement. First, a low initial cost and, secondly, the small maintenance costs. By using our own forces, we could build

This street has a soil-cement base. The surface will be asphalted.

The street in the inset is scheduled for improvement this year. It has a granular surface material and requires considerable maintenance. The large picture shows a motor grader and disk harrow mixing roadbed material after the addition of a pre-determined amount of portland cement.

Base for Streets

Construction costs and public inconvenience are reduced by soil-cement base and asphalt surfacing

C. Q. Wright has been City Manager of Albany, Ga., for twenty-four years.

a soil-cement base with 62 pounds per square yard; double-surface asphalt treatment for 85 cents per square yard. This cost was exclusive of curb-and-gutter sections, drainage, and location and repair of utility lines. With maintenance costs at a minimum, it was possible for us to provide more streets since more funds were available to us for new streets.

Simple Construction Methods

Construction methods employed on Albany streets, though scientific, were simple. First, the existing roadbed is scarified to a depth of 6 inches. The scarified material is then pulverized with heavy-duty offset disk harrows, followed by the application of a predetermined amount of portland cement. The cement and pulverized earth are then mixed with the disk harrows, and a predetermined amount of portland cement applied. The cement and the pulverized earth are then mixed with the disk harrows, cultivator, rotary speed mixer, and gang plow. Necessary water is added with a pressure distributor and uniformly compounded with soil and cement, using the same equipment mentioned above.

Next step in the soil-cement processing operation is accomplished through the use of a sheeps-foot roller which packs the mixture to required uniform density. A motor grader is utilized to shape the section to crown and grade; spike-toothed harrows and nail drags scratch out compaction planes near the surface and compaction is completed with a pneumatic-tired roller to give a smooth surface.

Inasmuch as we were equipped to do other types of street-base work the only equipment we purchased was a Seaman Pulvimixer, which was in our opinion a valuable addition to city equipment facilities.

Experienced City Engineer

Last June the city was fortunate enough to acquire the services of a former state highway engineer, Earl Olson. Mr. Olson, as City Engineer, is responsible for the success of our program insofar as engineering details are concerned.

Albany's businessmen and taxpayers are becoming increasingly conscious of the fact that good streets are excellent investments. Many new enterprises have recently become a part of this rapidly expanding community and one of the contributions to their prosperity is known to be the presence of wide, well-paved, and well-maintained streets.

This salient advantage we are endeavoring to keep and improve for Albany.

Processing with the aid of heavy-duty cultivator. The soil had previously been scarified and portland cement added.

GREENDALE and the FUTURE

Footpaths placed away from the highways make walking safe and pleasant.

By CLARENCE S. STEIN, F.A.I.A.

GREENDALE, Wis., is destined to play an important part in American history. It is true it is small—but that is one of the reasons why I think it will have a lasting influence on the form and character of future communities. That these are going to be quite different from our existing cities is becoming increasingly apparent.

People are rebelling against the congestion of buildings, traffic, and humans in our immense but obsolete cities. Many of those who can, have been escaping from the dangers and tensions of life in the old centers. They have vacated great areas of slums and blight, and left them rotting away. They have gone out beyond the built-up areas to the open country or suburbs in search of more spacious living, for tranquillity, and for their children's health and safety. They seek broad vistas of woods and sky, and plenty of open country within walking distance.

These things are to be found in Greendale. Quite as important, the citizens have the means of conserving these characteristics. The greenbelt that surrounds the village protects the community from commonplace development on the outskirts; it preserves its unity and individuality.

A Lesson Learned

We know from the failure of the old cities what not to do in building the new. Moreover, we know in general what should be the form of new communities that will fill the needs of living safely and happily in this age of the automobile, and of increasing leisure time, and how to do so without wasteful extravagance. Our faith in our judgment is confirmed by the fact that where Europe's cities have been destroyed, the plans for rebuilding them follow the general form that we visualize for America.

We have here in America a few places that were planned, built, and operated according to what is generally accepted as the sensible, desirable, and practical form of community of this age. Among these, perhaps the best examples are the three Greenbelt Towns. They have been tested by ten years of use—and the demonstration is going to affect mightily the future building of new towns throughout America.

For this reason—if not for the joy of living here—it is important that Greendale conserve its qualities and continue its development along the lines that it has been following. Look around with me and you will see what I mean.

The essential characteristics of Greendale that should be preserved are:

Greendale is both country and city.
Greendale is superbly related to its natural site.
Greendale was planned and built as a unified whole.
Greendale is a spacious, comfortable, convenient place for living.
Greendale is protected from change by its greenbelt—and, most important of all,
Greendale is a community — a sound, sensible American community.

Country and City

When I revisited Greendale last Autumn I was again impressed by the unity of urban and rural environment. From any house you can walk in a few minutes to the farms and forests that surround the village. Grazing cattle and great fields of grain permanently frame and embrace the groups of houses. The kindergarten youngsters look out through great windows into the woods in which squirrels and birds entertain and perhaps instruct them. Contrast this with the hard masonry walls that form the close-up outlook from most of

This month Greendale celebrates its tenth anniversary. This Wisconsin "greenbelt town" has been fortunate in many respects—and not the least in securing Clarence S. Stein to evaluate its first decade of achievement in a booklet appearing as a special feature of the celebration. From this booklet, with the cooperation of Mr. Stein and of Walter Kroening, Community Manager of Greendale, the accompanying article has been prepared.

the living, working, and recreation places in the old cities!

The Village Fits the Ground

Greendale is superbly related to its natural site. The form of the land has indicated the location of roads, paths, and buildings. Attractive features of nature have been preserved: for example, the stream that flows through the wooded park in the very center of the village. *Good planning consists of discovering nature and preserving or developing it to serve man's habitation.* There is where the planners of Greendale have differentiated the village layout from that of the endless checkerboard patterns that have been superimposed over the natural form of land in the inhuman cities of the past.

Greendale was planned and built as a harmonious whole. It shows that regimentation and monotony are not necessarily the product of over-all design of the street pattern and buildings of a village. The buildings are harmonious in spite of the diversity of their form and placing. The care with which the planners related structures to site and to one another is the result of skillful practice and a real affection for the place they helped to create. The varied architectural beauty accentuates rather than overshadows its natural setting. A restful and gracious unity is the result.

Safety Planned and Achieved

Greendale is safe. There has not been a single automobile fatality, and not one serious accident during the ten years of its existence. Compare this with the big cities and even typical towns that still hold to the street plan that was obsolete when the motor vehicle became the dominant feature and danger of urban life.

It is not by chance that Greendale has this remarkable record. Its streets are planned for their diverse use of either through traffic or direct access. As a result, only the machines that are serving the houses on a lane or a street are likely to go there. Also, the pedestrian paths are in large part completely separated from highways.

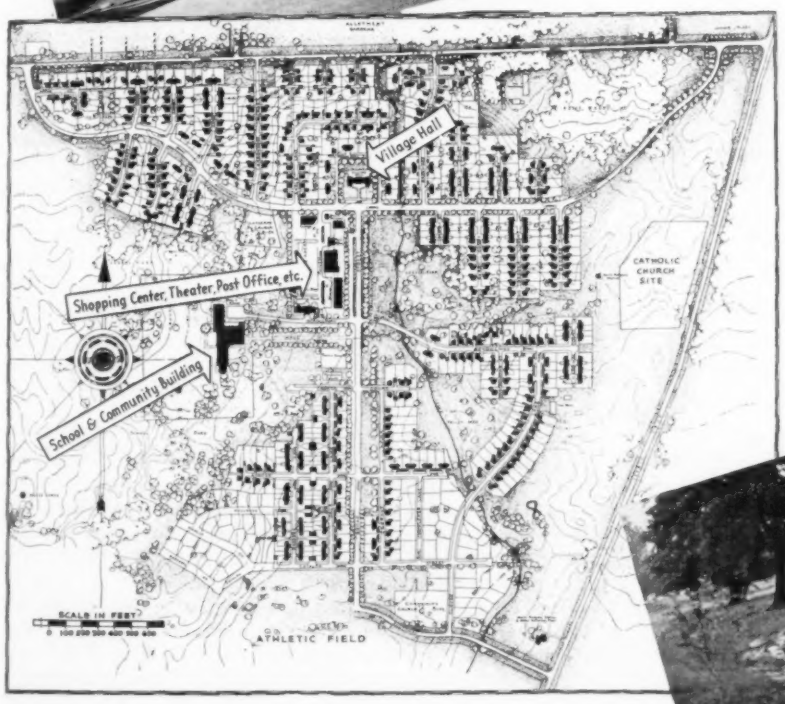
Built for Good Living

Greendale is a spacious, comfortable, convenient place for living. The green breadth of Broad Street that leads to the Village Hall introduces the visitor to the roomy character of the village. The Central Park along Dale Creek at one side and the commercial buildings and theatre with their own service road, as well as the mall and tennis courts at the other, open broadly to the view. Around the houses are goodly private gardens — most of them beautifully kept, I observed. The houses were carefully located so that they are not cramped and crowded as most speculative housing is. This, in spite of the need of economizing on the length of utilities and roads, so that rent could be low.

Protected by Its Greenbelt

Greendale is shielded from external dangers and encroachments as were medieval towns. But there is a great difference. The old communities were protected by gray fortifications: Greendale is secured by a belt of natural green.

Greendale can be safe from undesirable contamination as long as its citizens desire. Contrast this with what happens to many suburbs. On the outskirts of a spreading metropolis, a satel-



Greendale's architectural unity is combined with a spacious rural setting in a plan superbly related to its natural site. The stream shown flows through the wooded park in the very center of the village.

lite town may be surrounded by attractive woods and open farm land just as Greendale is. Then the flood of population flowing out from the big city spreads toward the village. It covers the intervening land with a disorderly assortment of structures. The roads are lined with an ugly, chaotic mixture of gas stations, eating places, and packing-box abodes. Ultimately, a speculative builder buys a large farm or two just beyond the village borders and erects rows and rows of unsightly, badly constructed houses. They are beyond the jurisdiction of the village, as well as that of the big city. There is no adequate regulation of the construction or maintenance of houses, or of highways, or the quality of utilities. The families who have come in search of space and natural beauty find that they have traded city slums for suburban blight. So they move on in search of that peaceful land that seems always just beyond. They may find it, but as individuals they can never protect or hold it. A wide-open area is needed to prevent destruction from the spread of blight just as much as from forest fire.

That is what the greenbelt around Greendale does. It guarantees the integrity of the town.

It serves other purposes too. It brings country and semi-wilderness within walking distance of homes. Farms and forests are familiar to kids from daily experiences, not merely from pictures in school books and movies. Picnics and hiking can be enjoyed by the family as a whole. The nature of changing seasons becomes a beautiful reality.

Town folks and farm folks know each other as neighbors, friends and associates. They come together in town meeting, churches, village and social affairs and at the cooperative, or the tavern. One more barrier that creates strangeness and misunderstanding among different groups of people is dissolved and broken down.

But the greatest advantage of the greenbelt is that it definitely limits the size and growth of the community. That is desirable, because only so can the neighborly character be sustained—and the common interest of all in their common affairs be kept alive.

Greendale Is a Really Neighborly Community

The neighborhood community is now accepted as the basic unit of city building as well as planning. It is recognized that the individual house and lot cannot have permanent value as habitation except in relation to its surroundings.

There has been so much talk about neighborhoods and communities by architects and other technical people that one gets the idea that a community is made of brick and stone and pavement. Really, a community is people. To state it more definitely: a community, in a democracy, is a group of folks living together and participating in common interests. School, town meeting, community parties, cooperative store, library, playground, clubs, theater, tavern, medical care: any or all of these may form the basis of common interest. But this is the important thing about a neighborhood community: it is not merely a physical place, but a living, related society. Therefore it must be small enough to permit friendly association. Small neighborhoods are essential for eye-to-eye democracy—and this is basic, not only for local contentment, but for national freedom and world-wide security.

It is just that kind of neighborly community life that makes Greendale such an important demonstration of the kind of towns we need all over America. It is only in small places that everyone can know everybody and associate with as many people as he wants. Living in such a place does something to folks.

All through the activities of Green-

New Towns Urged for New York Region

THE importance of the green-belt idea and the new-towns concept, of which Greendale is one of the country's few examples, was underlined by Paul Windels, president of the New York Regional Plan Associtn, at a luncheon meeting during the National Citizens Conference on Planning in Newark, N. J., on May 18th.

Pointing out that the New York metropolitan area today is at the crossroads, and that its problems are applicable to other metropolitan areas, Mr. Windels called for the building of new towns "to make for efficiency, economy in operation, reduction of congestion and infinitely pleasanter lives for the people."

He declared that by 1973 New York City would have an estimated increase in population of 700,000 persons, and, in the 17 counties of the New York region, an additional 1,300,000. To provide for these increases, 300,000 additional living units in the city and 800,000 in the 17 counties would be needed. He continued:

"People are steadily moving farther away from the central places of employment. A striking illustration of this is the fact that whereas in the 15-year period (1925-1940), population in the area increased 26%, the built-up area increased 56%. People want more residential space to move around in. . . .

"We estimate an increase in our commuter population to and from New York City, if present trends continue, of 70,000 additional daily travelers by 1973, which means approximately 70 more commuter trains twice a day. How they can be provided for in view of existing congestion, nobody yet knows. It is also estimated that by 1960 our automobile traffic may be double that of today. . . .

"In sheer financial self-defense, and even more important, for more desirable living conditions, we must channel and guide this new growth in such a manner that we create many new regional centers instead of piling up our growth around a few centers. . . ."

Stating that the creation of entire towns and communities is a field which calls for state leadership, Mr. Windels declared that he would like to see one of the large insurance companies lend its aid to an enterprise of that size in cooperation with one of the states and one or more industries seeking more favorable location and modernized design and setting within the region.

"This is not decentralization," Mr. Windels added. "It is creating new centers to provide for our future growth. There will always be a tremendous number of people who will want to live in the great cities, which will have their purposes and serve particular needs. But what we must do, instead of concentrating all of the employment of our increased population on, perhaps, only a half-dozen centers, is to spread it out and let the increase find its residence and employment in 50 or more intelligently planned and developed centers throughout the region—some of them new towns."

dale one feels a spirit of fellowship—and as far as I could observe, it does not interfere with privacy or family life.

The Future

I said in the beginning that one of the fine qualities of Greendale is that it is small. But don't misunderstand me—I did not say Greendale was of a perfect size. In fact, I think it is apparent now that it has certain disadvantages because it is too small. A place that has a high standard of community and local-government services must spread the costs among an adequate group. Education and culture from infancy to old age; recreation, public utilities, and all the other facilities in Greendale require a large population to support them economically. There is evidence of this in the experience of Greenbelt, Md. When the population of that town increased from about 3,000 to 7,000 in 1946 as the result of the construction of an additional thousand houses, the cost of local government per person decreased some 50%. The cooperative store earned twice as much and thus doubled the rental it paid.

As Greendale grows, it will probably follow the sensible policy of starting new neighborhoods just as soon as a neighborhood has attained a desirable and effective size. Each such neighborhood should be large enough to maintain an elementary school to which the children can walk conveniently and safely. The adults should adequately support a complete neighborhood shopping center, but they should not be so numerous as to destroy the quality of neighborliness.

Each new neighborhood should have its own meeting place, school, playground and stores, arranged architecturally to form a new community center. Each neighborhood should be separated from the others by a permanent open natural area used for park, recreation allotment, gardens, or other community purposes. Thus the inhabitants of each neighborhood will feel the individuality of their own community and will have a pride in it.

A Constellation of Neighborhoods

There will ultimately be a constellation of such neighborhood villages. They will each have their individual character, not only architecturally, but probably also socially and culturally, growing out of the predominant interests of the people of the different neighborhoods. These should be dynamically designed and spaciously arranged, so that they may grow, develop, and change to reflect the expressed interests and desires of the people of the neighborhood.

There will be a great advantage in having a number of such neighborhood villages close enough together so that they will form a united entity, large enough to carry on conveniently those activities that no single neighborhood can afford. Thus, a high school might be afforded by this united Greendale, so it will not be necessary for students to take long daily bus trips. A real theater and a more complete library might be supported, and probably also a technical school, the shops and laboratories of which could be used by adults after school hours. There might also be a more complete shopping place, with a department store as well as a specialty shop, which small neighborhoods cannot support by themselves. Numerous other facilities would be developed, depending on the desires of the inhabitants: a small local museum or exhibit gallery for traveling shows, a well-equipped sports arena, a swimming pool.

Greendale has plenty of space on which to grow. Less than 300 acres of the 3,410 acres (that originally were purchased by the Federal Government through the Resettlement Administration in 1936 as the site of Greendale) have been developed for houses and community facilities. So far, 525 acres of the greenbelt area have been dedicated to Milwaukee County for park and recreational purposes. It would be wise to deed permanently to the state or county the remaining greenbelt area surrounding the future expanded Greendale. Thus, the temptation to use portions of the protective belt for other than public or agricultural purposes might be done away with for all time. The smaller separation greens between the various neighborhood villages should be owned and operated by Greendale itself. They should be permanently dedicated to public use as one of the first steps toward the development of the future of the village of Greendale.

No Utopia

Strangers who read my description in praise of Greendale may think that I am writing about Utopia. But those who live there know that Greendale is not a phantom, but a fact. It is a living, growing reality.

It has had more luck than most villages. First, the conception of a community planned in orderly fashion for the motor age and increased leisure time, with its character and integrity protected by its greenbelt, was a great step forward. Then the detailed planning and development a decade ago was a very able job—thanks to the ability of the planners, Jacob Crane and Elbert Peets—their skill and more than that, the love that they put into the work. Then, there has been exceptional leadership on the part of one of America's ablest town managers, Walter Kroening. Here again has been a case of devotion as well as unusual understanding and skill. But none of these things would matter if it were not for the fact that Greendale has gathered together a lot of folks that appreciated its physical qualities and have made it a living community.

May Greendale grow and prosper—without losing its delightful character of a small neighborly village.

Municipal Salary Survey Compares Job Pay Boosts

TWICE as many cities increased the pay of firemen, policemen, and certain labor groups in 1947 as raised the pay of junior professional workers and certain skilled workers, such as bookkeepers. This is the gist of a survey of pay rates for 20 common municipal jobs in nearly 100 cities made recently by the International City Managers' Association and the Civil Service Assembly of the United States and Canada. Comparison of pay rates in 81 cities which reported pay rates early in 1947 and again early in 1948 shows that approximately two-thirds of these cities increased the pay of firemen, policemen, truck drivers, auto mechanics, heavy-equipment operators, labor foremen, and laborers during 1947, while only about one-third of these same cities increased the pay of junior accountants, junior draftsmen, and playleaders.

The officials of exactly 100 cities submitted pay-rate information in the most recent survey; of this number 70 cities have populations of less than 100,000. Fifty of these 70 cities, or 71%, increased their salaries and wages during the last half of 1947. In 37 of these 50 cities, the raises applied to all or nearly all of the employees, and in 13 cities only to some employees.

Detailed information for each of the 100 cities, including the beginning and top salaries for each of 20 positions, together with hours of work per week and number of days' annual paid vacation, appears in a report entitled "Pay Rates for Selected City Jobs in January 1948," issued by the International City Managers' Association in April, 1948. Copies of this report were sent to the officials of cities which subscribe to the Association's Management Information Service.

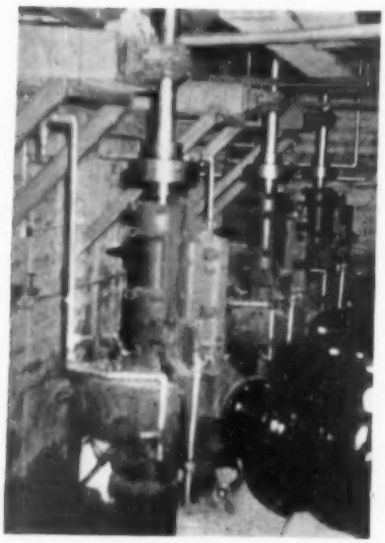
Miami Beach, Fla.—

A Pressure Sewer System

Unique method of collecting sewage by a pressure sewer system permits collection in an area so flat and with such a high water table that a gravity system could not operate

CONVENTIONALLY you distribute water to the homes under pressure, and take it away in the form of sewage by gravity. But in Miami Beach the sewage flows away to its final point of disposal under pressure also. The only gravity flows in the system are the short runs from the houses to the pumping stations.

A system like this has been engineered to meet conditions that exist in one of the country's most unusual communities. Miami Beach, as everyone knows, is a resort city. Its permanent population amounts to 35,000 people, but during the winter this swells to more than 100,000. It probably is the only city in the world this large that does not have rail or air terminal facilities. The vacationing 65,000 people who come here to escape the winter's snows are not the type to be cared for by haphazard services. Whether it is water supply, sewerage, street cleaning,



A set of the new DeLaval pumps recently installed in one of the stations.

or garbage collection, Miami Beach aims to make it prompt, thorough, and attractive.

Regional Difficulties

One of the limitations placed on the city is the low elevation of the ground, averaging only 5 feet above sea level. And still another difficulty that has to be faced is the presence of corrosive gas from the mangrove swamps, which permeates much of the subsoil. Ultimate disposal of the sewage is another problem that is important here, where keeping the beaches clean and attractive is vital to the life of the city.

Originally the city disposed of its sewage by discharging it into the government channel at the south city limits when the tide was dropping. This served only so long as the storage basins had the capacity to hold the sewage during high tides. As a result, about 15 years ago City Engineer Morris N. Lipp and his staff set out to overcome this difficulty. And in 1937 they accomplished this task by building a series of force mains and a 7,000-foot outfall of 36-inch cast-iron pipe laid in a rock trench, making it safe from the strong tropical hurricanes that sometimes strike this area. The project was designed and construction supervised by the consulting firm of Malcolm Pirnie, Engineers, New York City.

Outfall Protection

To protect this outfall against undertow that might scour away to top covering, concrete baffles 2 feet thick, extending from the bottom to the top of the trench and from wall to wall, were placed at frequent intervals along the line of the pipe. Recent observations indicate that there has been no scouring action. At the water's edge, where the scouring action is particularly strong, bulkheads and groynes protect the pipeline cover. The line itself is connected by flexible bolted joints. It is covered by 2 feet of the soft oolitic limestone natural to this area. This limestone has the characteristic of cementing itself into a hard top covering.

To deliver the sewage to the outfall, the city uses a common force main that stretches itself throughout the length of Miami Beach. Engineer Lipp has connected each of the seven pumping stations to this line independently instead of lifting the sewage and letting it run by gravity to the next station. In this way, if one station breaks down it does not bother the balance of the system. Further, the costs of operating have not been noticeably higher than they would have been by any other system. The method has the economical feature of requiring storage capacity at one station only, for the area that the station serves.

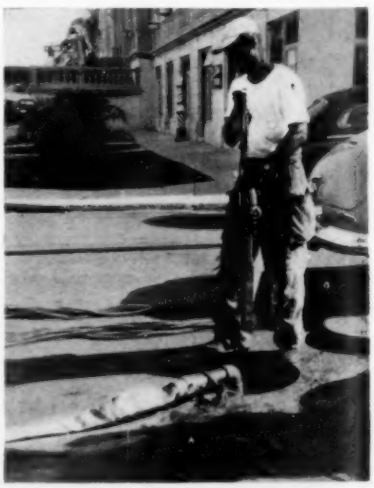
At the two large stations the equipment is manually operated. At all other stations the equipment is automatic and is installed entirely underground. If the equipment had been designed for pumping from one station to another, all stations would have required more complex controls.

Beauty in Design

Emphasis on beauty and use of the imagination can be no more clearly illustrated than by the design of the pumping stations. At one of these stations is a small, gracefully designed obelisk. This "obelisk" is actually a vent to allow the escape of sewer gas at a point high enough to prevent its being a nuisance.

At other stations one might see a flag waving from a tall, graceful flagpole; this, too, is a vent for the sewer gas from an underground pumping station.

All stations are powered by electricity. In the event of a breakdown in any station that would extend long enough to overload the storage capacity



Workman prepares to insert a sewer scooter into manhole to clean a line.

of the wet well, the sewage can be discharged into the storm-sewer manhole. The times when this emergency discharge system has been needed have been very few.

As can be seen, this type of sewer-collection system permits building the force main at a shallow depth. As can also be visualized, the unstable soil conditions make foundations and joints for the sewers important.

It is the Miami Beach practice to classify natural sand areas as stable and filled-in areas as unstable. Most of the filled-in areas have mangrove formations varying in depth from 1 to 8 feet. The spongy mangrove adds considerably to the instability of the filled areas. Roughly, the east half of the city is natural sand, and the westerly half made by hydraulic dredging on mangrove. Over a period of years, Engineer Lipp has developed these practices:

1. When the pipe is 12 inches and over in size and below the groundwater table, a lean-mix concrete cradle is placed around the bottom and sides of the pipe, encompassing the lower half of the pipe.

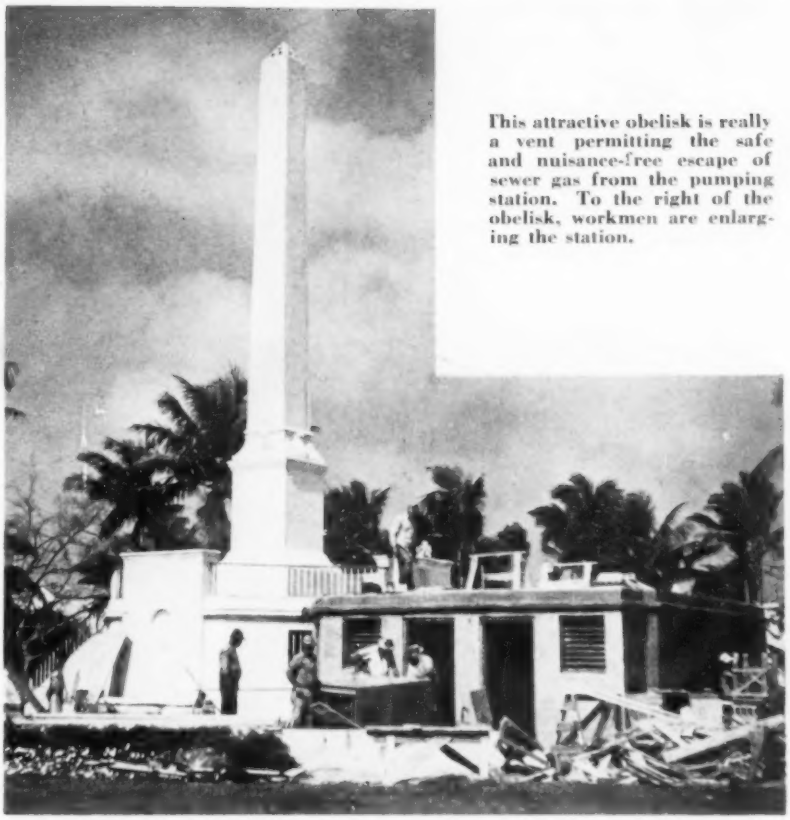
2. For sizes under 12 inches, with the pipe below groundwater, a concrete cradle is used where the soil is unstable. If the ground is stable, a crushed stone foundation with bitumen-compound joints is provided.

3. When the sewer is above groundwater table bituminous-compound joints are used without any special foundation provisions, except where trench loads require special strengthening.

Gas Deteriorates Concrete

Concrete sewer pipe has not been able to give a good account of itself in the areas where mangrove gas is present. Deterioration, however, does not take place if the pipe is completely submerged. In these areas Engineer Lipp has specified terra cotta pipe exclusively, where the capacity of such pipe will carry the load. If larger capacity is required, he uses reinforced concrete box culverts and designs them to be submerged completely at all stages of the tide. This is particularly applicable to the portion of the sewer system collecting storm water. In the sanitary sewers, terra cotta pipe is used.

Superintendent Kelpsh pulls line that flushes ahead much of accumulation.



This attractive obelisk is really a vent permitting the safe and nuisance-free escape of sewer gas from the pumping station. To the right of the obelisk, workmen are enlarging the station.

Storm sewage, of course, does not require transporting to the 7,000-foot outfall. In general, this goes directly to Biscayne Bay or any of the several inland waterways. It is important to get the water away quickly. And with the low head that the storm water can develop on the island, large cross-sections are naturally required. In one area a street intersection 4,000 feet from the bay and only 3½ feet above sea level was drained through an 18-inch pipe. Water would stand on this intersection as long as 48 hours after a heavy rain. Now a box culvert with 30 square feet of cross-section carries the water and drains it away as fast as it falls.

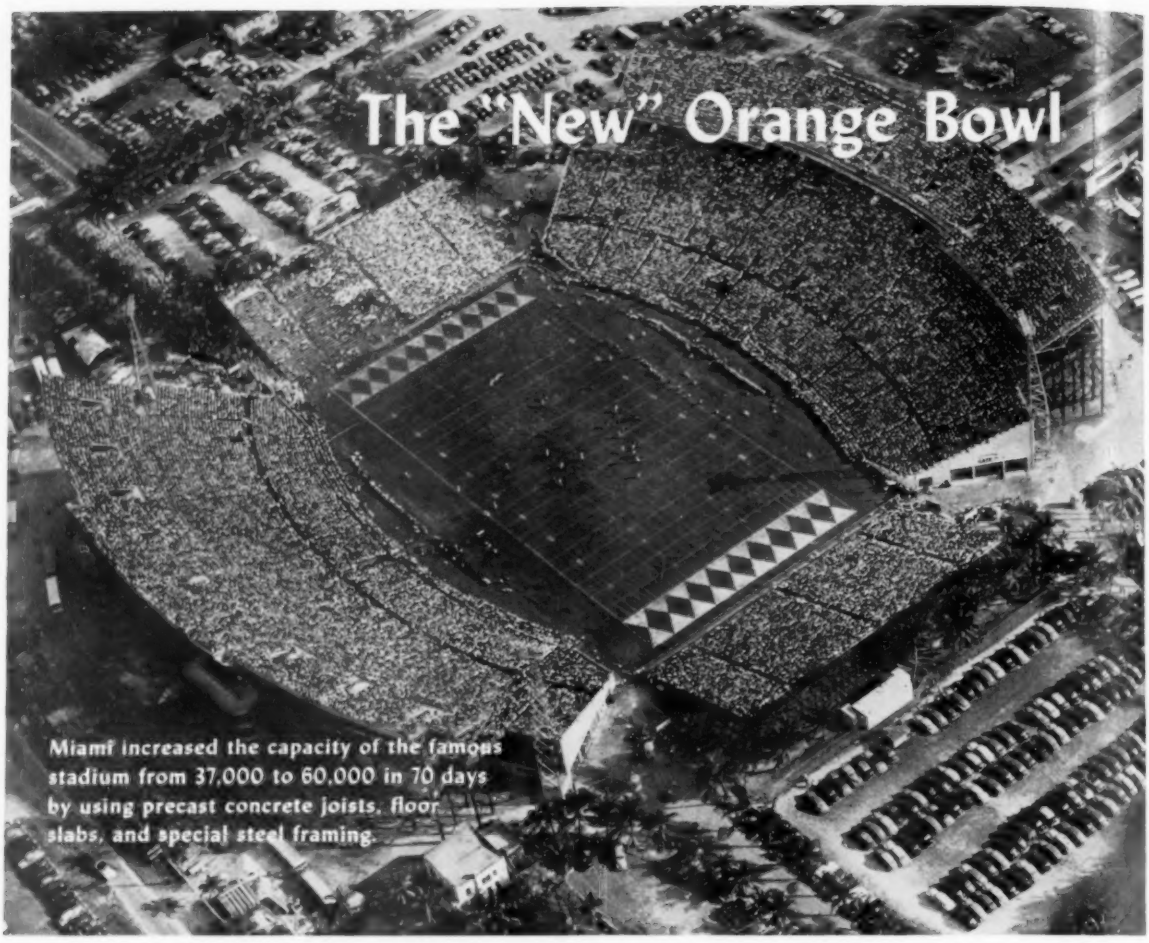
Engineer Lipp keeps the top of his storm sewers below the hydraulic grade line. He does not determine this gradient by the slope at which the line is actually constructed. It is based on the principle of discharging water from a tank of high elevation to one of lower. In this case, the hydraulic gradient is the line down from the water level of one tank to that of the other.

He has been able to construct inverted siphons under such existing utilities that are too expensive to relocate.

Cleaning the sanitary sewers involves a piece of equipment that is distinctly Miami Beach's. Engineer Lipp's Sewer Superintendent, A. E. Kelpsh, has developed a device that he calls a "sewer scooter." This consists of a round rubber gasket arrangement that is mounted on a wheeled runner. Superintendent Kelpsh fits the rig into the sewer line to be cleaned, and allows the rubber gasket to seal the sewer. The sewage backs into the manhole where the cleaner was placed. When it backs high enough it forces the cleaner through the line, pushing an accumulation of dirt in front of it.

To help in the cleaning, a flushing action also is supplied. A line secured to the cleaner is connected to the gasket in such a way that when the line is pulled, the top half of the gasket folds back, allowing sewage to rush forward at high velocity and scour the area in front of the machine. As soon as the line is released, the top half of the gasket folds back to the closed position, and the momentum of the sewage forces the cleaner ahead by a sort of water-hammer action.

The "New" Orange Bowl


Miami increased the capacity of the famous stadium from 37,000 to 60,000 in 70 days by using precast concrete joists, floor slabs, and special steel framing.

The Orange Bowl filled almost to capacity. Note the ramps, recently constructed, in back of the left grandstand.

IN THE official records, you will find the big Miami Stadium identified as the Roddey Burdine Field. But today there probably aren't over 100 people in Miami who know it by any other name than the Orange Bowl. Now it can accommodate 60,000 and brings them all close enough to see easily what happens on the playing field.

What is even more important is the fact that City Engineer Ray Williams and Chief Design Engineer Art Darlow laid it out so carefully that the contractors were able to put it together in a record-breaking 70 days of construction —in time to see service at last year's Orange Bowl game.

Not a "Bowl"

To be exact, the stadium isn't a "bowl" at all. It is a "parentheses." There are two separate stands facing each other and built in the approximate shape of segments of an ellipse. Filling in the ends are temporary bleachers. The open ends allow air to circulate through and make conditions better on the playing field.

Engineer Williams and Chief Design Engineer Art Darlow had the assignment of boosting the size of the Orange Bowl dropped in their laps late last summer. As just mentioned, the old stadium was laid out to a modified ellipse with each bay in the stadium to to a separate dimension and each member a separate length. The stadium was of all-steel construction except for the seats.

They knew that this type of construction would never do now. It would be bad enough to persuade the steel companies to release enough steel to build the stadium without special fabrication for each member. In fact, they knew that they simply wouldn't get all the steel they wanted, and that they would have to go to some other type of construction. And they knew finally that whatever the design, it would have to be simple so that the contractor could erect it quickly. With these facts known, they went about the task of doing a sound job of engineering that turned these "handicaps" actually into an asset.

The first problem was that of basic design for seating. The easiest way would have been merely to extend the existing bleachers back in the same manner that football stadiums are built the country over. But they decided to avoid the difficulty that has plagued so many spectators in big stadiums when they find themselves assigned to a seat almost in the next county. Instead they adopted a double-deck design that keeps the spectators close enough to see the details of the play.

Cantilevered Stands

This called for a cantilever design that reached 100 feet in the air. Designer Darlow used an 18-inch, 96-pound WF column to carry the bending moment generated. He also detailed the steel members so that they could be assembled quickly on the ground and erected as huge units.

He also employed a time-saving device to fit the cantilever bents around the existing oval bleachers. Instead of requiring that the cross-framing between bents be different for each frame, he designed two sets of bays measuring 16½ feet both front and rear, and then designed a wedge-shaped bay measur-

ing 16 feet 4½ inches in front and 19 feet 1½ inches in the rear. Thus, instead of making a smooth curve, he brought the bleachers around in a series of chords. It would take an experienced eye, however, to detect this difference. It meant further that the identical dimensions could be used for each of the 16½-foot bays, and also for each of the wedge-shaped bays. Instead of a different set of measurements for each bay, only two sets were needed.

Precast Concrete Deck

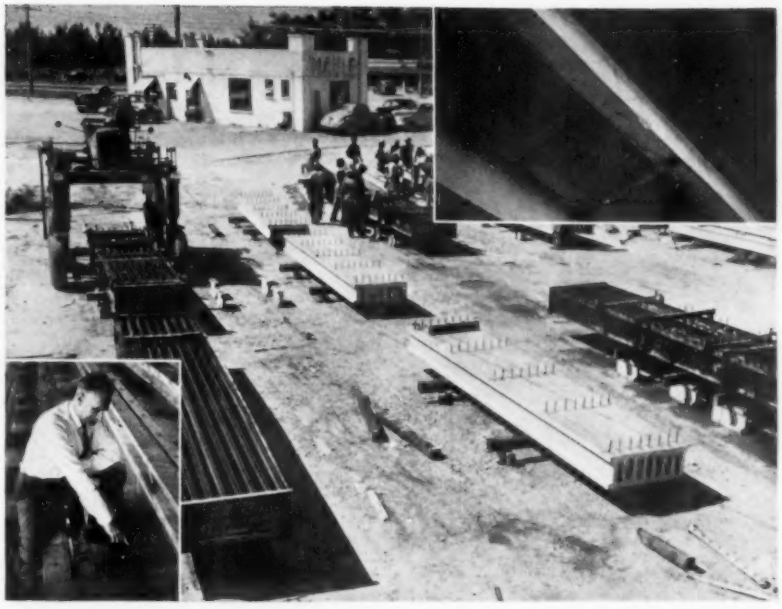
How to lay the decking in was the next problem. The existing stadium used steel decking throughout. This was not too satisfactory, however, because of the excessive maintenance required. Miami's sandy soils meant that sand would be tracked into the decking and would quickly cut any paint coat away —and steel deck was noisy.

To get away from all this, Designer Darlow adopted what is probably the first use of this type of precast concrete construction used anywhere in the world. The deck was designed for a loading of 100 pounds per square foot plus a 50% overload for the impact. It is supported on precast concrete joists. The concrete was designed to yield 3,500 pounds per square inch compressive stress at 28 days. Possolith was used to make the mix denser. The slabs were sealed with plastic at the points where they passed over the steel beams. At other points the joints were gunited closed. A steel strap connects the top of the precast joist forming one tier of seats, with the bottom of the joist supporting the next tier of seats above. There are three straps for each joist, one at the center and one at each end. This, in effect, makes the deck a continuous steel frame encased in concrete.

Precast Design Cuts Costs

The economics of this precast concrete joist and decking is interesting. When awarding the contract, alternate bids were received for an all-steel structure. The bid for the design using precast slabs was lower by $30,000 than for that using all steel.

Leading into the stadium are eight ramps about 10 feet wide and rising at the rate of 6 feet for each 33 feet of horizontal travel. The ramps switch back and forth at this 33-foot interval. There were roughly 25,000 lineal feet of handrail used on the entire addition, and approximately 15,000 feet of this handrail went into the construction of the ramps. Attached to the handrails are solid sheet-aluminum panels 3 feet 6 inches high, which tend to give nervous spectators a feeling of security from the extreme height. The ramps use a steel flooring with a one-inch concrete covering. Alundum was scattered into the surface of the concrete at the rate of ¼ pound per square foot to improve its wearing qualities. The ramps were designed to carry a 150-pound live load with a 50% factor of safety for impact. The eight ramps will empty the stadium in less than 20 minutes. At the time of last winter's Orange Bowl Game, only four of the ramps were in place.



Virtual assembly-line methods were employed to construct the precast joists and panels. Left inset: Design engineer A. Darlow points to a joint in the floor that has been gunited full so that the floor resembles a continuous slab. Right inset: This close-up of the underside of the stadium shows precast concrete joists and the floor slabs that cover them. Note the strap iron that connects the lower portion of one joist with the upper portion of the other.

The rebuilt stadium required the lights to be relocated. The lighting is designed to furnish 35 foot-candles of illumination on the playing field. However, this is difficult when the full 60,000 people are present; cigarette haze alone will be enough to cut the illumi-

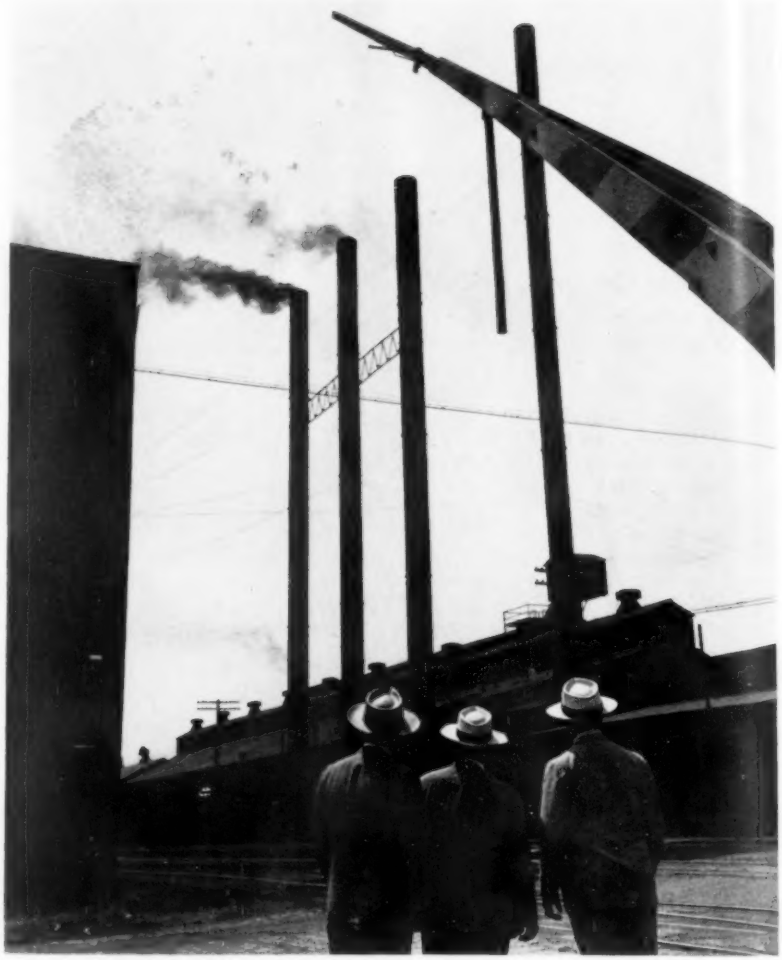
(*Continued on page* 151)

Design was planned so that most of the framing could be performed on the ground and the assembled sections hoisted into place. Inset: This shows the ramp system that gives access to various portions of the stadium.

Help For the Smoking Chimney

A coal producers' organization tells how to prevent blackening the cities' skies with unnecessary smoke

By JACK VOGELE
Coal Producers' Committee For Smoke Abatement



Intelligent inspectors can save the city from air pollution like this and also can save the operators' expensive fuel.

IF YOU want to study the best way to fight crime you would not ordinarily enlist the aid of a National Association of Pickpockets and Thugs, nor, if you were out to prevent fire, would you look for help from an American Association of Firebugs.

But if you want to prevent smoke from fouling the air of your cities, some of the best advice and assistance available today comes from the Coal Producers' Committee for Smoke Abatement.

The reason for this is obvious. Thugs may not be interested in preventing robbery and mayhem. Firebugs may resent interference with their pleasant pastime of setting fires. But nobody knows better than the coal industry that it is good business to prevent smoke and fuel waste, thus boosting consumer satisfaction.

The day existed when black smoke rolling out of stacks was a sign of prosperity. But the situation is different now. Everything is expensive, including smoke.

The coal industry, realizing its obligations and the opportunity to render real service, organized the Coal Producers' Committee for Smoke Abatement. The Committee drafted some of the best engineering talent in the country to help make comprehensive surveys in cities trying to solve smoke problems. Today, after atmospheric conditions in ninety cities have been studied, the Committee feels that it has accumulated more factual data on this subject than can be found anywhere else.

Among other things, it has learned that there is little chance for success in abating smoke and air pollution unless there is earnest determination upon the part of the citizenry to see it through after it is fully aware of the intensive work, the technical skills, and the constant vigilance required to see its will properly administered.

What Success Requires

The Committee also recognizes that the successful smoke inspector must be an engineer, a diplomat, and a salesman all rolled into one. He will achieve more lasting results if he can prove to the plant managers that he understands their boiler rooms and that he is capable of finding solutions to their problems. He must induce them to "cooperate" with others to make their city a cleaner place to live in. He will only irritate if he resorts to the "strong-arm" method for enforcement, as it eventually may nullify the abatement program.

Carelessness Biggest Factor

One startling point uncovered in smoke-abatement studies is that some 60% of the smoke emitted in our industrial cities is caused by carelessness. This figure was not picked out of the air. It is the answer obtained after carefully analyzing and tabulating data from thoustands of plants surveyed by the Coal Producers' Committee for Smoke Abatement.

By "carelessness" is meant that people have the basic facilities to work with, but because of inefficient or in-

correct methods of firing the plants, still create smoke. They can usually be taken off the "violator" list by competent engineers exercising better supervision. In some cases it only requires a few minutes or a few hours. In many cases it accomplishes a considerable saving of fuel while eliminating the smoke.

Other Causes of Air Pollution

It should be stressed here that the abatement of smoke will not completely clear the atmosphere over any industrial city, for a good part of the pollution comes from industrial fumes and exhausts, waste disposal, building construction and destruction, exposed soil surfaces, and just plain dust.

This is borne out by the findings of the Chicago Association of Commerce after comprehensive research in an attempt to correlate other factors with dustfall collections. Said the report, "If Chicago is to have cleaner air, Chicagoans will have to attack the problems of cleaning up many other sources of dirt as well as chimneys. The seasonal dustfall pattern in Chicago is more nearly like the seasonal average wind-velocity pattern than the seasonal coal-consumption pattern. The average dustfall reaches a peak in March; so also does average wind velocity. However, the average coal consumption reaches its seasonal peak in January, as might be expected. Average dust fall and average wind velocity vary in about the same proportion, whereas average coal consumption varies twice as much. If smoke were the only source of dust in the air, the dustfall variation might be expected to be as great as the coal-consumption variation. This is evidence that other sources of dirt in the air contribute more steadily all the year around than does the combustion of fuel."

Whenever surveys are necessary to determine the sources of air pollution, the Coal Producers' Committee for Smoke Abatement is organized to conduct them. This is a sure way to secure the information needed by city officials to develop proper programs for abating and regulating air pollution in their particular city.

During such a survey of one of the largest industrial cities in the United States, it was found that while 85% of the fuel-burning equipment inspected in the city was mechanical, more than 65% of it was producing smoke; also, that the ratio of the mechanized units that were making smoke to the non-mechanized which smoked was of the order of 5 to 1.

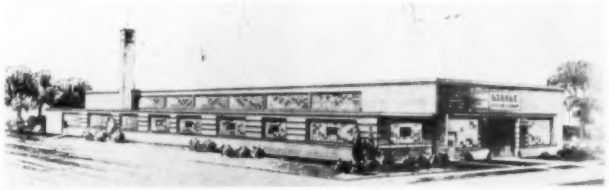
The Committee considers its work on smoke abatement in a city as a progressive service until the city in question has accomplished its smoke-abatement program. It is prepared to assist the city not only to find the facts, but to interpret them; to help in the establishment of the abatement procedure, and to follow up the progress of accomplishments.

Through close association with Bituminous Coal Research, Inc., and Battelle Memorial Institute, both nationally recognized research organizations, the Committee is in constant touch with the latest developments in fuel-burning equipment and methods for improved fuel utilization. This information is used and disseminated to the personnel of fuel-burning plants in cities in which the Committee is active. Experts from these organizations also cooperate with the Committee on particularly difficult plant problems. A smoke department confronted with a smoking plant which does not yield to the usual methods of correction can avail itself of needed assistance by requesting the Committee for it.

The success of any smoke-abatement program for improving the atmospheric conditions in a municipality is dependent in large measure on the provisions of the governing ordinance. It must reflect in true fashion the findings of the survey as to sources of smoke and pollution, the causes, and the comprehensive knowledge of the means of correcting faulty conditions which produce smoke. The ordinance must also be a reflection of the public attitude toward smoke and other forms of pollution, and should therefore authorize the establishment of a control department of sufficient size, quality, and permanence to accomplish the goals sought after they have been definitely established and measured. The Coal Producers' Committee for Smoke Abatement has had years of experience in preparing model provisions for ordinances covering the requirements necessary for most cities, including those of a general nature as well as those of special application to a particular city. It is competent to prepare modifications of model provisions to better suit the necessities of individual cities, and can also assist the municipal authorities in the preparation of rules and regulations governing the installation, modification, alteration, and repair of existing and new equipment which come within the scope of the smoke-abatement ordinances.

In short, the Coal Producers' Committee for Smoke Abatement, with headquarters in the Transportation Building, Cincinnati, is organized and staffed to provide assistance on all phases of smoke abatement, wherever and whenever its services are requested.

Cudahy's New Garage Uses Water-Cooled Roof



The architect's sketch of the Cudahy garage, designed to provide a home for several of the city's departments.

IN THE new garage built by the City of Cudahy, Wis., in the summer of 1947, space was provided for the engineering, water, street, plumbing, and garage departments to eliminate the wastefulness of scattered offices. Now, instead of leaving the building and walking or riding several blocks, officials can refer to other departments easily. The new location has four acres along the railroad, and when the sidetrack is installed, carloads of materials can be received.

Instead of a sawtooth or skylighted roof, a flat one designed to carry water in summer is used. This will protect the roofing from excessive heat and will also make the building cooler. Light is admitted by glass blocks in the walls just under the roof.

The offices and walk are 6 inches higher than the garage floor. This protects people on the walk, and also prevents bumping the office wall with motorized equipment.

Adequate locker and shower rooms have been provided and the garage is heated with a bin-feed stocker. It was designed by Mr. Mark Pfaller, a Wauwatosa architect.

The City Tells Its Story

By HENRY DAVIS NADIG, *Director of Public Relations, New York Regional Plan Association*

Progress notes from Connecticut, California, and England

THE opportunity open to state universities for extensive service to local government in the field of municipal public relations has already been indicated in this department.* You will be interested to know that the University of Connecticut, at Storrs, is moving in this direction. In a later issue I hope to be able to give you a fuller story on what Storrs is doing.

At the moment attention goes to the new publication, *Connecticut Government*, which the University's Institute of Public Service has started to publish as a quarterly. A digest of town and city events of interest to officials and employees, it aims to keep its readers abreast of current trends and developments in local government throughout Connecticut and in other states.

The first issue, a six-page, letter-size publication, stressed the benefits that local-government officials and employees receive from the various professional organizations. It contained a list of these organizations in the state, with their offices, number of meetings held, and requirements for membership. The publication also carries two pages of activity notes from some 20 cities and towns in the state.

Connecticut Government, of which Joseph M. Loughlin is editor, should meet with wide acceptance among local government officials and with all those concerned with the operation of local government in Connecticut. In fact, it is to be hoped that the publication will supply such a need that, before long, monthly issues of the magazine may be required to meet reader demand and increased public interest in city- and town-government activities in the Nutmeg State.

Not only in Connecticut but in other states local government in its various phases is requiring more and more attention from the professional and the expert. Yet we find that in a large number of cases local government is still hesitant to apply the type of business-like, expert attack upon municipal problems which is used so successfully by business and industry. The city-manager movement has done the most to dispel this sense of reluctance to bring modern practical concepts and action into play in municipal administration. Operation of municipal public relations *officially* also is a logical part of efficient, modern, local government.

Report from Birmingham

This brings me to Birmingham, England, and to an interesting letter recently received from F. W. Bradnock, Public Relations Officer of the City of Birmingham. Mr. Bradnock writes:

> The public relations policy in this country, so far as it applies to local authorities, is growing very rapidly, and now many local authorities, large and small, have some form of public relations organization. The title of the principal officer varies, but Public Relations Officer or Information Officer seems to be the most popular.
>
> In the main the duty of these officers is to publicize their local authority to the citizens, although, of course, any publicity they can obtain for their authority on a national and international scale is welcomed.

Mr. Bradnock sent along a copy of his annual report on the Birmingham Information Department. In this he notes:

> According to the most recent information, nearly 40 of the larger local authorities are now operating, in one form or another, a public relations department and there is every indication that this policy will grow.

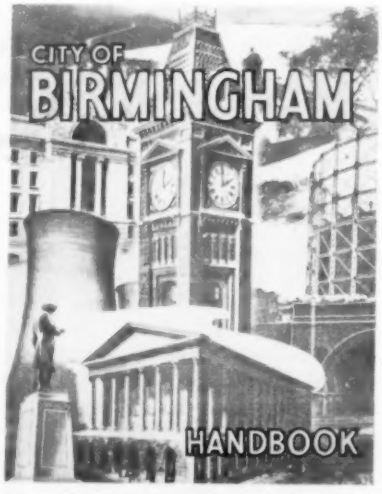
I wish that governing bodies and chief executives in our American towns and cities could more fully appreciate the value and the economy of an official municipal public relations setup somewhat along the lines conceived and operated in England.

Birmingham ranks as England's second city (population about 1,000,000), but I think that the mayors of all of our cities of 50,000 population and up should have a copy of Mr. Bradnock's report to his committee, so they could more clearly realize what can be accomplished. It is little short of amazing that even of the 91 cities in our country with a population of 100,000 or more only four, so far as I have been able to learn, have anything in the nature of official municipal public relations.

Mr. Bradnock has divided the activities of his department into six headings:

1. The maintenance of a general information service for citizens, visitors and correspondents.
2. Publicizing in Birmingham of the work of the City Council and the development of a civic consciousness in the minds of citizens.
3. The reception of and giving of assistance to visitors to the city, particularly from overseas.
4. Preparation and distribution of publications.
5. Liaison, radio work, etc.
6. Assistance to other corporation departments in publicizing appeals, activities, etc.

These activities are in fact so simple that, as the record shows, in our country we do not seem to see them and have been failing too often to appreciate their very fundamental character and



One of the major pieces of work by the PRO of Birmingham, England, has been the production of the 208-page *City of Birmingham Handbook*, the front cover of which is reproduced here. A compendium of history and current facts, it is an outstanding example of a live-wire city telling its story clearly in word and picture.

* THE AMERICAN CITY for January 1948, p. 92.

their indispensable quality in expert and official application.

What we have been doing for the most part in our cities has amounted to a haphazard, unplanned, uncoordinated use of municipal public relations tools—the most costly procedure with the minimum result. We do not investigate, analyze, and organize so that the whole scope of municipal public relations is coordinated in the best interests of sound economy. Our approach is sporadic, hit-or-miss, halfhearted.

Just as many of our cities are today paying the hard way for lack of soundly planning their physical growth and development, so they are also paying the hard way for lack of official MPR. They are paying in cold cash where issues involving capital expenditures are not clearly defined and popularly understood, where interdepartmental coordination is lacking or bungled, where opportunities for savings are not seized for want of know-how. They are paying less tangibly but equally importantly in the acquiescence of a lethargic public, in the unresponsiveness of an often docile civic consciousness, in the absence of any clearly defined municipal direction or objective.

My criticism is not that we are not making progress. We are—but slowly. I think we could make better and more economical progress through municipal public relations carried on as an official operation. Progress comes when the people want it and act to get it. MPR is a way of putting people in the know, of corraling their participation, so that progress comes easier. The conscious, official application of MPR tools makes problems fewer, achievement less of a struggle.

CONNECTICUT GOVERNMENT

A DIGEST OF TOWN AND CITY EVENTS OF INTEREST TO OFFICIALS AND EMPLOYEES

April, 1948 — Storrs — Vol. 1, No. 2

Snow Removal Problem for Town Roads, City Streets, Runs Local Budgets Into Red

SUMMER CONFERENCES

The Institute of Public Service is making plans for two schools for local officials and employees in Connecticut, to be held during the summer on the campus at Storrs. Persons attending these schools will be housed in Wood Hall, shown above.

Town and City Finance Officers School, June 20-25, 1948. Local finance officers and staff, practicing public accountants, selectmen, members of boards of finance and others interested in public finance are invited to attend. An outline of subjects to be discussed will be

(Continued On Page 8)

Taxpayers Get Expected Service, Costs Are High

Although the winter of 1947-48 didn't bring the greatest snowfall in recent history to Connecticut, it did bring snow removal problems aplenty to towns and cities. According to the U. S. Weather Bureau at Hartford, the total snow-fall this winter to March 15 was 77.9 inches. The same source states that the total fall for the same period of 1945-46 was 79 inches. However, the principal difference between this year's snow and that of the previous record year is that this year when the snow moved in, it stayed. In previous winter seasons, nature cooperated in the snow removal problem with a January thaw; this year the thaw never arrived until February was well along. Then, too, after winter had apparently spent its fury, more snow fell to heap additional trouble on snow-weary officials and highway crews, not to mention the additional costs to local taxpayers.

Quality Service Important

The quality of service which citizens have come to expect from their local government is an important factor in the cost of removing snow and sanding town roads and city streets. Today every taxpayer expects his street or road to be plowed out and downtown streets to be cleaned in the shortest possible time following a storm. Until a few years ago, most drivers were inclined to leave their cars at home after a storm and use public transportation facilities. In recent years, more and more people have moved beyond readily available transportation lines. For these people, regular use of the automobile has become a necessity.

Changes in the shopping practices of the housewife, particularly for food, also have a bearing on the expected quality of snow removal service. The time was when the average housewife used the family car for

(Continued On Page 2)

First page (right) of the second edition of a new quarterly aimed to serve local government officials, published by the Institute of Public Service, University of Connecticut. Joseph M. Loughlin is its editor.

Petaluma, Calif.

Nevertheless, as I intimated, advancements are being made in many communities. There must have been a good bit of public relations by individuals and organizations lately in Petaluma, Calif., where leadership from the public brought official action. This I gather from a story received from James C. Crase, chairman of the Committee for Petaluma's Future. Progress by Petaluma (population 10,000) was made last June when the Council went to work with a new charter, hired the city's first city manager and gave the municipal machine full throttle, Mr. Crase says, adding that: "Ideas and proposals, pulled from limbo by evidences of a new municipal vigor, bombarded the City Hall."

Interest seemed to center around the need for a comprehensive development plan for the city, and the City Council, on recommendation from the Chamber of Commerce, appointed a committee representing each of the city's active organizations, charging it with the job of preparing such a master plan.

Mr. Crase says the committee soon recognized it hadn't the technical ability to make a master plan, got the Council to hire a firm of professional planners. But the committee and most of the citizens—from Boy Scouts to Women's Clubs—participated in making surveys which the consulting firm checked and analyzed, making the report presentations.

Other progress from Petaluma: A year-round, full-scale recreation program is now in operation under a professional director; playgrounds have been improved and recreation activity has been stepped up; negotiations are under way for erecting a municipal auditorium and recreation center; a yacht basin is being agitated for; an airport may be an adjunct to the harbor; the Board of Education and the Administration have found common ground for supporting a recreation program.

Mr. Crase does not say just what is the present status of planning itself in Petaluma, but I assume that the local leaders are wise enough to realize that planning is a continuous process, and that Petaluma *must have a planning commission with a paid technical staff to proceed economically with the city's developments.*

Recreation in Akron

Speaking of recreation, the Recreation Commission of Akron, Ohio, recently put out a small leaflet succinctly but completely telling the story of what the Recreation Department offers for the people—adults and young—of the city of Akron.

Titled "Fun for the Family in Akron" the publication notes the full scope of summer and winter programs, gives facts on how the Department operates with the three-way cooperation of city officials, Board of Education and City Council, and calls attention to Akron's needs for more recreational facilities.

AWWA Reports National Water Policy

PROBLEMS of groundwater received attention at the recent annual meeting of the American Water Works Association in Atlantic City, N. J., in a series of papers that was climaxed by a report by Abel Wolman, Professor of Sanitary Engineering, Johns Hopkins University, and Chairman of an AWWA Committee studying the Association's policy on national water supplies.

Leading off the discussion was E. W. Bennison of Edward E. Johnson, Inc., Minneapolis, Minn. Tests by capable hydrologists and engineers specializing in this field, Mr. Bennison stated, will disclose rock formations and water-yielding ability of the formations. Unconsolidated formations can be recognized and analyzed easily.

Following this came a discussion of the policies and problems of controlling groundwater, delivered by H. T. Critchlow, Chief Engineer of the Division of Water Policy and Supply in the New Jersey Department of Conservation. The problems include (a) interference, (b) overdraft, (c) pollution.

If public wells interfere with private wells, the public supply is liable, on the theory that groundwater under private land is a proprietary right and the owner has the right of use pertinent to the land.

Overdraft may be due to rapid increase in demand by growth in population or industrial development. Sometimes this is seasonal and groundwater reservoirs can recover.

Pollution is serious in many areas, Mr. Critchlow emphasized. Sometimes this is due to salt-water intrusion, from improper disposal of sewage near wells in rock formations containing fissures, or it may be caused by salt-water escape from gas and oil wells.

Favors Limited Federal Action

Speaking informally, Dr. Abel Wolman departed somewhat from the Committee's prepared report in his discussion of the AWWA national policy on water resources. He first outlined the AWWA Executive Board principles on pollution abatement. These were as follows:

1. AWWA has continuing and vital interest in the reduction of pollution of surface waters in the United States.

2. AWWA holds that the primary responsibility for control of stream pollution rests with states, their political subdivisions, and all the industries located therein.

Out for a stroll on Atlantic City's Boardwalk at the AWWA annual meeting are three of the principal speakers. At left is Dr. A. Wolman, Professor of Sanitary Engineering at Johns Hopkins University, Baltimore, Md.; center is A. E. Gorman, Sanitary Engineer on the Atomic Energy Commission, Washington, D. C., and right is H. H. Gerstein, Chief Filtration Chemist, Chicago, Ill.

3. AWWA recognizes that rivers do not respect state lines, agrees that coordination and promotion of stream pollution collection can be facilitated by limited legislation at federal level.

4. AWWA favors federal legislation in the field of stream pollution which will use to the greatest possible extent existing state and local authorities and facilities for control of pollution.

5. It holds that in the absence of state or local action, appropriate federal agencies should be empowered to direct pollution control works to be built and, if necessary, to provide loan funds for planning as well as guidance in construction.

6. When no state agency is empowered to enforce reduction of stream pollution within a state and such pollution can be shown to affect interstate waters adversely, AWWA agrees that a federal agency should be given authority to enforce correction of conditions to the end that pollution may be controlled.

AWWA feels that services of the United States Geological Service are necessary and valuable, and that curtailment of this activity would be a real calamity to further water development.

Regarding water-supply development, the Committee offers these possible areas of agreement:

1. Provide first priority for water-resources development to be afforded to beneficial consumptive use, present or future, of waters for domestic, municipal, stock water, irrigation, or general agricultural purposes.

2. Provide for preparation of plans for unified regulation and development of river systems of the country according to sound engineering and economic principles.

3. Provide for definite and effective programs for construction of projects included in such plans, the programs to be prosecuted as found desirable by Congress to meet current necessities.

4. Provide that programs be made adjustable to exigencies of unemployment relief in periods of business depression and of defense in times of danger, when such programs are flexibly deferable.

5. Take proper account of economic, special, and existing benefits, in considering specific projects.

6. Limit federal contributions to amounts warranted by national interests.

7. Provide for equitable distribution of project costs.

8. Assist in settlement of controversies between or among states over interstate waters.

9. Provide for systematic and effective cooperation among federal agencies and between such agencies and individuals in the several states in formulating water plans and program.

10. Eliminate inconsistencies and conflicts between or among existing laws and regulations relating to the control or utilization of water resources.

Air Conditioning

THE growing popularity of air conditioning and the part it plays in the city's water supply came in for close scrutiny at the AWWA meeting. Leading off on a panel discussion on this subject was Frank C. Amsbary, Jr., manager of the Illinois Water Service Co., Champaign, Ill.

Water-works officials, he said, have looked with some envy upon electric-system load-builders like radios, toasters, electric water heaters, and others. Air conditioning offers the water industry an important load-builder. In the water industry, however, groups now start talking "special rates and regulations" to curtail such use. Mr. Amsbary asked, is this a short-sighted policy?

For a partial answer he offered this difference between the water and electric services. Electric utilities offer a service only. Water works must provide a service plus the physical transportation of a great volume of product. This difference eliminates any direct comparison.

Demands on the city's water system for air-conditioning water vary with the temperature of the water. If the system provides water at a temperature

of 50° F., the water may be used in air-conditioning units that will require up to 8 gpm per ton of equivalent refrigeration. Surface supplies that are warmer may need only 2 gpm per ton of refrigeration. Geographic conditions also have an effect.

Urges Ordinances to Control Use

Rules restricting the waste of water for air conditioning should be in every municipal ordinance, said Ted Kain, general manager of the Columbia Water Company, Columbia, Pa., the second speaker on the air-conditioning panel. As examples, he stated that Chambersburg, Pa., prohibits the use of air conditioning larger than the equivalent of 5 tons of refrigeration unless the units have an approved water economizer. The Virginia Section of AWWA recommended no water for enlarged refrigeration in excess of 0.05 gpm per ton of equivalent refrigeration. Miami Beach forbids the discharge to sewers in excess of a 2-gpm continuous flow.

Critical Conditions

When the use by air-conditioning equipment during the six summer months exceeds 90% of the plant's rated capacity, the water-supply condition is critical. This is the opinion of Elwood L. Bean, Principal Assistant Engineer of the Bureau of Water in Philadelphia. If the use exceeds 70% of the plant's capacity, the time has arrived for serious study of limiting these high usages.

Metering is a logical requirement, Mr. Bean stated. New York City may require separate meters on equipment furnishing the equivalent of 25 tons of refrigeration or more, or needing more than 50 gpm. Philadelphia water rates encourage some sort of water conservation for units larger than 10 to 15 tons of refrigeration.

No need exists to limit the tonnage of refrigeration in a community if the system is properly designed, said Mr. Bean. If the water is properly conserved, there are few if any systems that cannot supply the water required.

Price Trends Encourage Water Conservation

Price conditions today encourage manufacturers to build equipment that economizes on water, said Lynn B. Mighell, of the Carrier Corporation, which manufactures air-conditioning equipment. Mr. Mighell was the third speaker on the panel.

Power rates have come down, he explained. Water costs as well as equipment costs have gone up. The tendency is to use more electricity and less water.

At Champaign, Ill., under existing water rates, it was cheaper to use water and throw it away than to install refrigeration equipment with recirculation

The long and the short of the present AWWA heads. Left is Professor A. P. Black, University of Florida, and Vice-President of the Association. At the right is L. Enslow, Editor of *Water and Sewage Works*, Association President.

features. This was pointed out by Manager Frank Amsbary, who spoke for the second time on the panel. The water coils required 3 to 8 gpm per ton of refrigeration. If converted to mechanical condensers, it would save 73% in water. If it used evaporative coolers, there would be a 95% saving.

The Illinois Commerce Commission approved application to deny the benefits of the last two steps in the water rates unless the water user installed conservation equipment in his air-conditioning system. This increased some bills 150%, but still did not raise it high enough to encourage conservation. Nor did the added revenue produce enough income to pay for more plant capacity.

In view of this, the Commission approved new regulations. These are as follows:

a. The use of water for air-conditioning equipment is prohibited when used directly from the mains as a cooling medium in air washers or in any equipment whereby air to be conditioned comes in contact with sprays or wet surfaces, or where water is used as a direct or indirect cooling medium in coils.

b. The use is prohibited in all compressor-type refrigeration units having standard rated capacity of 1½ tons of refrigeration or more.

c. All compressor-type refrigeration units having standard rated capacity of 1½ to 5 tons may be equipped with water-cooled condensers using water from the mains; provided not more than one such unit with such capacity and so equipped may be used in an air-conditioning or refrigeration system, except for emergency standby.

d. All compressor-type units 5 tons or over shall be equipped with evaporative condensers or similar cooling equipment, and only makeup water from the mains will be required.

e. If other than compressor types are to be used, the use of water from the mains shall be limited to not more per ton of refrigeration than would be used by compressor types when operated under normal conditions as outlined in (c) and (d).

Reason, Not Discrimination

The water-works industry must realize, argued Marsden Smith, Chief Engineer of the Department of Public Utilities in Richmond, Va., that the average North American opposes specific high rates or special regulations. He will claim discrimination against high special charges as quickly as denial of or regulation of conditions of service. If air conditioning needs special rates, then why not lawn sprinkling or swimming-pool operation? He strongly opposed any limit that can be avoided by reasonable application of present rates.

To show how this worked, he gave the example of a large estate that installed a sprinkling system and that normally would have needed a great deal of water. To counteract this need, he persuaded the owner to sprinkle the lawn in sections. A railroad that needed a 4-inch connection for filling diesel engines quickly was persuaded to erect a tank at its own expense so that the draft of water on the system would not be so drastic.

It seems reasonable, he said, to require economizers for air-conditioning units larger than 5 tons of refrigeration. If special rates are required, then it will be necessary to make them high enough to cover the cost of the service and the cost of applying the special rates.

New AWWA Officers

Past President: N. T. Veatch, Black and Veatch, Consulting Engineers, Kansas City, Mo.

President: Linn Enslow, Editor, *Water and Sewage Works*, New York City.

Vice-President: A. P. Black, Professor of Sanitary Engineering, University of Florida, Gainesville, Fla.

At the same meeting W. F. Rockwell, Board Chairman of Rockwell Mfg. Co., Pittsburgh, Pa., was elected President of the Water and Sewage Works Manufacturers Association.

More than 1700 attended the AWWA Conference, breaking all previous attendance records.

Next month's issue will report additional papers delivered at the AWWA meeting.

Emulsfied Asphalt's Record As A Base Stabilizer

Cottage Grove, Md., uses a lower-cost stabilization. Construction here consists of a 5-inch emulsified asphalt stabilized base and seal coat with coarse chips.

Country-wide survey shows good results on both heavily and lightly traveled streets

HOW emulsified asphalt works when it is used to stabilize soil for street, highway, and airport construction came in for concentrated study by the American Road Builders Association at its annual meeting recently in Washington. The investigation was directed by C. L. McKesson, Los Angeles, Calif., consulting engineer, chairman of the ARBA committee on soil stabilization with emulsified asphalt.

Of the 22 projects studied, four received an "excellent" rating for performance, and the rest were rated as "good" or "satisfactory." Ten of the projects reported no maintenance problems. One recorded a cost of $225 per mile, and the rest recorded no excessive maintenance costs or gave some equivalent description. Typical reports of the city streets are recorded below:

LAKESIDE DRIVE, OAKLAND, CALIF.

This improvement was built in 1936 of 13 inches of emulsified asphalt stabilized base on 1,800 linear feet of boulevard skirting Lake Merritt in downtown Oakland. The design requirement placed it on an unstable, dredged-in, blue clay subgrade. Water level of the lake alongside is only 2½ feet below pavement surface. The engineers used disintegrated rhyolite with clay and quarry fines for stabilizing material, since this type of aggregate is cheap in this area.

Construction crews used 10-cubic-foot concrete mixers charged by hand to blend the aggregate and asphalt mixture. They then spread the mix by hand between screeds in 2-inch layers. The engineers selected this method, not on the basis of construction efficiency, but to secure maximum WPA employment. Compaction is by 10-ton, 3-wheel rollers after seven days' curing.

This base has been protected by 3-inch emulsified asphalt penetration macadam placed in 1936 and a 2-inch asphalt concrete surfacing in 1940.

There have been no base failures or deformation under heavy traffic. Aside from resurfacing, there has been no maintenance cost reported.

LAFAYETTE, LA., STREETS

This consists of 245,000 square yards of street paving built as WPA projects in 1935-39. The work used an emulsified asphalt stabilized base 4 inches thick, a 1-inch emulsified asphalt penetration open-graded, crushed-rock binder course, and a dense-graded emulsified asphalt concrete wearing surface ½-inch thick in which finely crushed shell was used as aggregate. The wearing surface was mixed in a concrete mixer to a wet consistency, and rodded between screeds. It was subsequently rolled.

The pavement varies from 18 to 36 feet wide and includes light residential streets as well as heavily traveled downtown business streets.

Aggregate stabilized included existing

shell or gravel surfacing mixed with soil beneath to give required thickness. Usually about 25% of the soil-aggregate blend passed the #200 sieve.

The report indicates satisfactory service under present conditions. Maintenance included seal coat with asphalt and slag in 1944.

BURLINGTON, VT.

This study covers streets built between 1936-45, aggregating 46,364 square yards and consists of 4½ inches of emulsified asphalt stabilized base. These were streets which had in earlier years been surfaced with gravel, crushed stone, or macadam, but which were no longer satisfactory for the increasing traffic.

The subsoil is generally a sandy loam and drainage is fairly good. The old metal was scarified, bringing up with it considerable subsoil. This was mixed with 3 to 4% emulsified asphalt and recompacted. A 1½- to 2½-inch asphalt surface, usually emulsified asphalt penetration, was then constructed.

Temperatures reach 30° F. below zero in the winter, and the frost depth is 6 feet or more.

The 1936 projects are now 11 years old but none of them has shown any evidence of distress. The need for maintenance has been negligible.

RESIDENTIAL STREETS.
THREE MARYLAND TOWNS

These projects are located in Cottage City, Hyattsville, and Brentwood. All three are substantially the same, having a 5-inch emusified asphalt stabilized base and seal coats with coarse chip covers.

Mixing was done with blade graders, spring-tooth harrows and farm cultivators. All bases were compacted with flat-wheeled tandem rollers. The subgrade ranged from fine to coarse sand. This was mixed with about 5.8% emulsified asphalt (3 gallons per square yard) for stabilization.

All three projects are in good condition, one after nine years and two after six years of service. There is no visible indication of maintenance or patching.

OLYMPIC BOULEVARD,
LOS ANGELES, CALIF.

This project consists of 4,925 linear feet of a 4-inch emulsified asphalt stabilized sub-base under an 8-inch portland cement concrete pavement laid over subsoil having a P.I. of 22 and a very high shrinkage value. The street has 6 lanes, subjected to very heavy traffic. It was built in 1939.

The base was laid to insure a uniform moisture content in the subgrade, to support the pavement at the joints, and to prevent softening and swelling of the subsoil because of water leakage under the joints.

Los Angeles' heavily traveled Olympic Boulevard consists of 8 inches of portland cement concrete laid over a 4-inch emulsified asphalt stabilized sub-base on soil with a P.I. of 22.

Lakeside Drive, Oakland, Calif., has served well during the past 12 years. It consists of 13 inches of emulsified asphalt stabilized base placed on filled clay with the water table only 2½ feet below the surface.

Many heavy-traffic streets in Los Angeles have been paved with 8-inch cement or asphaltic concrete laid over similar stabilized sub-bases 4 inches thick, consisting of granular pit-run material stabilized with about 4% emulsified asphalt.

The results have been reported very satisfactory. Warping, curling, cracking, and joint failures in concrete pavements on stabilized sub-base have been negligible, even where joints are not properly sealed at regular intervals as they should be.

Sinking Manholes?

IT LOOKED to the people of Union Township, N. J., as though their manholes in the streets were sinking, and soon would disappear forever. But George Kling, Superintendent of Streets and Highways, knew better. What actually happened was that the street surface rose somewhat because of the excessive freezing and thawing during last year's severe weather.

To avoid vehicular accidents, he covers the "depressed" manhole with bituminous concrete but removes this layer later when the roadway sinks to normal grade.

Contrary to the experience that city officials are having in other parts of the northeastern United States, Superintendent Kling has not had to face numerous street repairs this spring, despite the fact that the winter's snowfall was three times as high as is normally experienced. He feels that there are three main reasons for this:

1. He uses tar for both surface-treating and patching. The tar products, he feels, appear to withstand flexing in cold weather more than do the asphalt products.

2. His crews carefully seal the roadway surface in the fall, thereby helping to eliminate freezing below the surface.

3. The streets are all carefully drained. Maintenance crews make it a point to keep all catch basins open at all times.

Trolley Coaches for Halifax

By CARL P. BETHUNE, K. C.
City Solicitor
Halifax, Nova Scotia

Arriving at a complete transit system including areas not formerly served, the city and utility company discovered an amicable footing never achieved before. Each assumed obligation and together worked out a tax plan that is eminently fair to both parties. The city must maintain roadways for good riding quality or lose transit service on neglected streets. The company must maintain good service or sell to the city.

AFTER having enjoyed the varied types of public transportation in vogue from time to time since its founding in 1749, the City of Halifax, on the eve of the celebration of its bicentenary, is to receive, almost as an anniversary present, a brand-new transit system. Having enjoyed the leisurely ride on horse-drawn cars, followed by a progressive variety of street railway cars and ending with the jaunty little one-man-operated "Birney" cars, supplemented in certain areas by gasoline-driven buses, Haligonians expect to see in operation a thoroughly new system of modern trolley coaches by the end of 1948.

Much thought was given to the choice between buses powered by electricity and those driven by internal combustion motors. The selection of electrically operated trolley coaches was not surprising. The existing street-railway system, although still providing reasonably satisfactory service, was in need of much rehabilitation because of the exceptionally heavy demands made upon it during the war by the greatly increased population of the city. It was to be expected, therefore, that when the transit company, The Nova Scotia Light and Power Company Limited, which also supplies the city with electricity, was faced with a change in the type of transit system, it would favor the electricity-consuming trolley coach as against the gasoline motor or the diesel-driven bus.

Under the plan, the greater part of the city will be served by trolley coaches, including areas not now served. New routes have been thoroughly debated and finally approved by the regulatory authority of the Province,—the Nova Scotia Board of Commissioners of Public Utilities. In this connection, it is of interest to note that certain streets which previously had two-way street-railway traffic will be limited to one-way trolley coach traffic only, while, at the same time, other streets which did not enjoy the public transportation system are now given that privilege. Moreover, motor vehicle parking on streets may undergo some restriction on the proposed trolley-bus routes.

Better Relations with Company

The transition from street-railway cars to trolley coaches brought with it a new relationship between the Corporation of the City of Halifax and the utility company owning the transportation system.

Formerly, the city was simply the taxing authority exacting its tribute in taxes on real property owned by the utility company and real property occupied by it, and in a percentage tax on the gross tolls received by the utility company from its street-railway operation. The change to trolley-coach operation seems to have brought the city and the company into an involuntary association in which the community of interest between the two bodies is increased. This is very evident in the new system of taxation proposed with respect to the new trolley-bus operation.

At the present time the track allowance of the company and the roadbed of the street-railway tracks are maintained by the company at its expense. Under the trolley-coach system, the roadbed is the city street, which is laid and maintained by the city. Owing to the continuous use of the same portion of the street by the trolley coach, it is expected that greater wear and tear will result to the pavement, particularly at stopping places. It is not unlikely that a heavier grade of pavement will be required on those streets which will be used for bus routes. Under the terms of the agreement entered into between the city and the company, the city is obliged to keep in good order the streets upon which the coaches run, and the company agrees to make an annual payment for this purpose of $400 per mile. The obligation thus accepted by the city is a concession on its part, since it is the law in the Province, according to a decision of the Privy Council, that a municipality is not liable to keep its streets in first-class condition at all times. Its liability can be stated to be for *mis*feasance and not for *non*feasance—that is, for doing an act negligently or carelessly rather than for failing to do the act at all.

A Fair Plan of Taxation

As will be seen later, the basis of taxation agreed upon between the city and the utility company, and ratified by the Legislature of the Province, is in the nature of a profit-sharing arrangement between the company and the city after certain essential expenses of operation have been provided for and certain basic taxes paid. The underlying principle seems to be that after a certain basic tax has been paid, and after operation costs and depreciation have been provided, a stabilization reserve set up, and a fair return received by the company on its investment, any surplus remaining properly belongs to the public that uses the transit system—in effect, the general public—and this surplus, under the proposed plan, is shared between the company and the city in the percentages agreed upon.

This plan of taxation, in addition to recognizing the joint interest between the city and the company in the proper operation of an adequate transportation system for the city, also recognizes the necessity for efficient and economical operation by the company for the general good of all. The company must have an incentive to operate in the most efficient manner; this sharing of the surplus earnings provides such an incentive to the company. In addition, it insures that the taxpayers generally will share in the prosperity of the company in good times, and the company will not be submerged with an unbearable burden of taxation when the tide of prosperity recedes.

The proposed plan of taxation is as follows:

The company will pay to the city:

(1) Two percent of the gross earnings of the transit service;
(2) Four hundred dollars per mile of street over which trolley-coach contact wires are strung, for a period of 10 years, after which the amount of this payment shall be renegotiated, having regard to any abnormal cost of maintenance and repair of pavement;
(3) Normal taxes on the real property of the company used in the transit service;
(4) Business (occupation) taxes on property occupied by the company;
(5) After setting aside for itself certain sums hereinafter set out, two-thirds of the balance of any surplus earnings.

After payment of the sums in the paragraphs (1), (2), (3), and (4) above, the company out of such gross earnings shall retain:

(1) Costs of operation and maintenance and a proportion of general overhead and administration costs;
(2) Reserves for depreciation of tangible assets at rates approved by the Public Utilities Board;
(3) Amortization of intangible assets at rates opproved by the Public Utilities Board;
(4) An initial return to the company on the total capital employed by the company in the transit service from time to time (both the amount of capital and the rate of return to be approved by the Public Utilities Board). The rate so fixed by the Board shall be that which represents the fair actuarial rate at which the company has obtained or might obtain from time to time 50% of its capital requirements on the security of its mortgage bonds.
(5) Two percent of the gross earnings of the transit service;
(6) One percent of the capital employed to be set aside as a fare stabilization fund until it reaches 5% of such capital. The fund is to be used in any year in which the gross earnings are insufficient to pay items (1) to (4) (inclusive) to the city and items (1) to (4) to the company for the purpose of meeting these items.
(7) A further 2% of the gross earnings of the transit service.

After payment of the foregoing items, any balance remaining of the gross earnings from the transit service are to be divided between the city and the company on a basis of two-thirds to the city and one-third to the company.

As a matter of interest, the agreement entered into between the city and the company provides that the city, after giving the company three years' notice, may cancel the agreement and take over the transit system on payment of the fair value of the properties used and useful in the service, to be determined by arbitration.

As to the maintenance of streets traversed by the transit lines of the company, the city is obligated to maintain such streets in first-class condition for the operation of the company's vehicles. The agreement provides that the riding qualities of any such roadway shall not be less than that at present existing on the track allowances of the company. If the city defaults in carrying out this obligation, the company may withdraw its transit service over such streets. The obligation upon the city to remove snow and sand streets is also dealt with, but the company is not relieved of responsibility to perform such additional work of this kind as may be especially required in order to enable it to provide efficient service.

This section of the agreement is as follows:

> That the City will at all times maintain the streets traversed by the transit lines of the Company in first-class condition for the operation of the Company's vehicles, and the riding qualities of any roadway provided shall not be less than that presently existing on the track allowances of the Company, and in default thereof, the Company, after due notice to the City and the Board shall not be obliged to operate its transit service or any part thereof over such street or streets or to any points in the transit system access to which involves passing over such street or streets and in which event the Board may order the Company to provide alternate emergency service, and the City to restore the roadway to proper condition (and any additional expense to the Company occasioned by any such emergency service will be paid for by the City), always provided that the Company shall give immediate notice to the City of any sudden break in the pavement, and shall itself, should such be found expedient, temporarily repair the road by the deposit of cinders or otherwise to permit the continuance of service. The City will from time to time in the normal course of its snow-removal operation, and having due regard to the needs of general traffic, remove snow from all streets and spread sand or cinders or some other suitable material upon all hills used in the transit service, but this shall not release the Company from such snow clearing, sanding or cindering operations at its own expense as may be found necessary to maintain its transit service as efficiently as possible, and the Company will, at its expense, and within a reasonable time, remove snow from coach stops and bus stops to such extent as will enable passengers to enter and leave its vehicles without difficulty.

City Ownership of Tracks

The removal of the street-railway tracks from the streets is a problem which has been faced and met in a variety of ways by other municipalities. In the case of the City of Halifax, the agreement provided for the transfer to the city of the ownership of the tracks to the city, and the city releases the company from any liability claim or demand in respect of the said tracks, such as the obligation formerly existing to remove the tracks from the streets upon ceasing to use them for a street railway. A proviso, however, was inserted to require the company at its expense to remove the tracks and wooden ties if the same at any time interfered with the repair or reconstruction or paving of any street. In this case the title to the tracks, etc., became revested in the company. The cost of such removal by the company is to be regarded as an operating expense in the year in which the same were removed.

The transition from one type of public transit service to another has consistently resulted in the creation of problems for the municipality involved and the patrons of that service. Not only in such physical problems as the removal of tracks and other fixtures and the restoration of the streets, but in changes in routes, in traffic control, and in the manner in which the economy of certain businesses are affected, is the matter of a change in the public transportation system a matter of interest and concern for every one in the community.

Arizona State and County Microfilm Records

OLD state records totaling several million items and covering taxes, incorporations, motor vehicles, road construction, land matters, bound newspapers, and cattle, horse, and sheep brand registrations are being microfilmed by the State of Arizona, under an appropriation of $10,000.

The work is progressing in the State Department of Library and Archives in Phoenix, under the supervision of Mulford Winsor, Department Director. By law, the Department is the official depository for all state archives, which include non-current county records. A number of counties are sending their old records to Phoenix, thus insuring adequate protection and releasing much-needed space in the county court houses.

Two microfilming machines, manufactured by Recordak Corporation, subsidiary of Eastman Kodak Company, are in use on the project. A Recordak Commercial Microfilmer automatically records documents up to 14 inches wide on 16-mm film. A Recordak Micro-File machine is used to record larger documents and large bound volumes on 35-mm film. The microfilm records will be kept in steel Recordak film files. Six drawers hold film records of 1,728,000 letter-size or legal-size documents. Properly catalogued, they are expected to reduce reference time to a minimum.

Business Likes Big Containers

PHOTOGRAPHS COURTESY OF DEMENTI STUDIOS, RICHMOND

This fleet of trucks gathers the containers from strategic points in the business district.

Richmond, Va., tries large, portable refuse-collection containers and gets enthusiastic support from the local business people

LAST year, the Richmond, Va., Department of Public Works changed from the use of ordinary garbage cans in the business area to the big portable Dempster Dumpster type of refuse-collection unit holding 6 to 8 cubic yards. After trying it for a few months, Refuse Collection Chief Robert S. Hopson discovered that he had cut his collection costs from $1.00 to less than 50 cents per cubic yard, which looked good in the city's budget. In order to see whether the public liked them as well as the city officials did, he decided to determine its reaction to this new method of refuse collection. The response was overwhelmingly enthusiastic.

Under the Richmond system, the local business houses purchased the units. The city provides the truck-hoisting unit that carries them away and dumps them.

Dairy Notes Improvement

From a leading dairy, he received this comment:

"In our opinion, the principle is sound in that it allows refuse to be deposited and disposed of in a single unit. Our unit is leak-proof, which enables our floor space allocated to refuse to be always free of any foreign matter. This is particularly attractive in that we are located near a residential area."

From the maintenance engineer of a hospital: ". . . we wish to say that the unit is far superior to the old trash cans formerly used. The yard is not littered up as it used to be by dogs and careless help."

Keeps Food House Cleaner

From the superintendent of a wholesale food company:

"We find that we are able to keep our premises much cleaner, and the area that was formerly used for trash and refuse from the plant is now free of any sign of rats. I believe this type of equipment is very practical for all plants handling food products and for confectioneries, grocery stores, chain stores, etc.

From the manager of an amusement hall:

"As to the initial cost, we feel that over a period of time the cost of the trash cans would offset the initial cost of this piece of equipment. We find that we are able to maintain a more sanitary and trash-free lot now that this piece of equipment is operating. I do not feel that we would care to go back to the old method of refuse collection unless absolutely necessary."

Reduces Fire Hazard

From the head of an auto-supply company:

"We are glad to advise that we are very much pleased with the new system. We find it to be a better system for removing trash than we have known before; our place is kept cleaner and neater, and having all the refuse in one container reduces the fire hazard and the rat problem immeasurably."

From the manager of an apartment house:

"It is a vast improvement over the old system of refuse collection. The installation of this unit has materially eased the problem of keeping the premises clean and the frequency and quality of the service is appreciated."

Cuts Rat Nuisance

And from the management of another apartment development:

"We find that this is a very great improvement over the old type of collection for this particular type of housing and would not care to return to the old system of refuse collection. We find that the premises are much cleaner and are free from the rat problem, and the method is superior in all respects to the old type of collection."

From a chain-store superintendent:

"There is nothing but praise that either I or the store manager have to offer for your service and new method of refuse collection. You have effected a decided improvement in the cleanliness of the premises and we have noticed a nearly 100% elimination of rats."

From the president of a local auto company:

"A letter of inquiry by your office asking our opinion on the Dempster Dumpster units is answered as follows:

"1. Ideal for keeping the shop clean, as everyone throws trash in the container so easily.

"2. It holds so much.

"4. It insures continual service or disposal of rubbish.

"4. It takes anything or everything that we could not get into a garbage can.

"5. It can be closed tightly, eliminating odors or blowing of waste paper.

"6. We all think it is a grand idea, and would love to see its universal acceptance and adoption in the city."

Hotels Enthusiastic

From the manager of a leading hotel:

"I am delighted to report that the Dempster Dumpster Service Unit is one of the greatest improvements that has been made at the hotel. I just do not see how we could do without it—it has certainly decreased labor and the cost of labor in cleaning the alley. As you probably know, we gave our tenants permission to install a similar unit in our private alley, which has also helped tremendously in the disposal of their trash."

From another dairy:

"We have nothing but favorable comments to make regarding all the questions asked in your letter, and assure you that we would never think of returning to the old system again. I think that your department should be recommended for the installation of this type of service for the people of Richmond."

And from another leading hotel:

"I want to say how well pleased we are with this service, as it has met a great need and we feel that you are doing an excellent job. We would not think of returning to the old system, as it would be like going back to the horse and buggy days."

Too Progressive To Go Back

From the director of operations of a department store:

"We are much in favor of this service; not only from the standpoint of keeping the city clean, but at the same time it certainly is one means of eliminating the rat problem which has always been very bad in Richmond. As for going back to the old type of refuse collection, I would like to say that I think it would be a step back for the city to go back to the old canvas type of refuse containers. Richmond is too progressive to go back to this old antiquated method."

From the superintendent of operations of another large chain store:

"The writer has followed up the collections and the service of these containers with our store personnel very closely, and will say that this equipment has come up to our expectations 100%. We have placed orders for six more containers and are expecting delivery of them any day."

From the head of a meat-packing firm:

"We can sincerely say that this is the finest service ever rendered us by the Refuse Collection Department. Besides keeping our building and premises free from trash at all times, it is also saving us plenty of money, since we have been able to eliminate the expense of hauling our trash to the dump every day. It also enables us to keep down rats, and they can find no trash to hunt food or hide in."

Proud of Refuse Disposal

The manager of an important restaurant in Richmond writes:

"We are delighted with the new containers and would not return to the old method of refuse collection under any circumstances. For the first time since I have been manager, I am proud of that portion of our restaurant where trash is collected."

And from a popular barbecue restaurant:

"We wish to state that it is the first container that we have found to be ratproof, and it enables us to keep our premises much cleaner. Under no circumstances would we like to revert to the old system of garbage cans."

From the plant manager of the local telephone company:

"The initial cost of the units has been justified in its operation. We find that our premises and the adjacent city streets are much cleaner; it is economical, for it precludes the necessity of a great number of ash cans and saves labor for both the city and the company."

From the manager of the intercity bus company:

"I am thoroughly convinced that this method will greatly reduce the number of rats, and it is definitely a great improvement in enabling one to keep the premises cleaner."

Economy Noted

From the head of a building construction company:

"We consider this quite an improvement over the old method of handling refuse. While the initial cost of the equipment is somewhat high, this is more than offset in other ways. Trash no longer becomes scattered over the premises, and in our opinion, the equipment does a great deal to control rats, dogs, and cats. Also we no longer have the old trouble of trash cans being stolen or broken."

A few correspondents suggested changes in the construction of the units, such as relocation of the handles. Some offered suggestions that would change the collection schedule. Many commented on the courteous attitude of the crews making the collection.

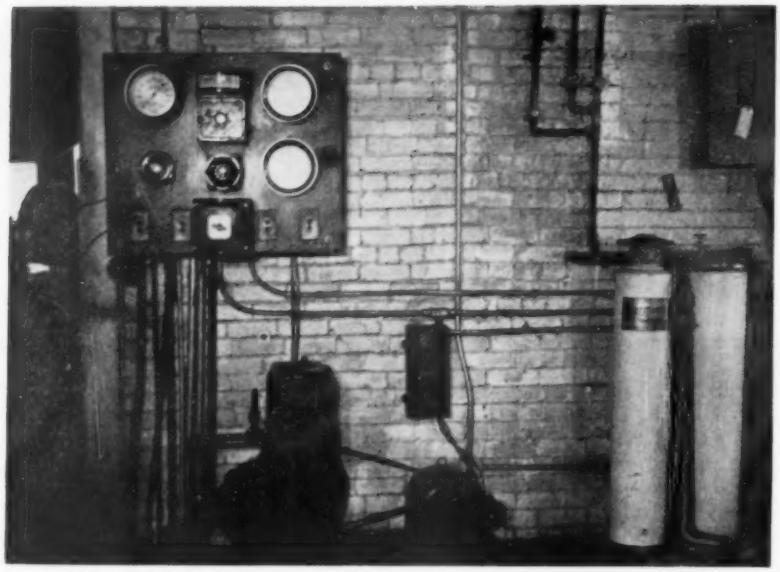
At present 121 of these collection units are in service in the City of Richmond. Four trucks working approximately 50 hours each, weekly, furnish the service for these units. It is anticipated that six trucks with about 180 units will be the ultimate efficient goal of operation of this type of service.

Chief Hopson serves under the general supervision of G. M. Bowers, Director of Richmond's Department of Public Works.

Some Dempster Dumpster units ready to be delivered to the users.

180,000 Engine Hours

The Girard, Pa., electric plant appraises a 10-year record



The three phases of plant operation are grouped here. The alarm panel holds Marshalltown pressure gauges, Minneapolis-Honeywell thermometers, and both Brown and Alnor exhaust pyrometers. A F-M compressor supplies air to start the engine. At right is the Permutit softener which treats jacket water.

FOUR diesel engines in the 10-year-old Girard, Pa., municipal power plant have been in operation for a combined total of more than 180,000 engine hours without a single engine failure. Carrying forward this pattern of perfection, a fifth unit, installed in 1947, already has added 2,000 hours to the record. Each of the four older engines has run more than 45,000 hours and generated in excess of 5,500,000 kw-hrs. Three of these units are still operating with their original piston rings. Yet these prime movers made last year the outstanding period in the ten-year life of the plant, producing more than 3,000,000 kw-hrs. at a rate of 12.04 kw-hrs. per gal. of fuel consumed.

The diesels which have given Girard 10 years of service and profit are all identical Fairbanks-Morse Model 32E14 engines rated at 300 hp at 300 rpm. Each is direct-connected to a 200-kw, 3-phase, 60-cycle, 2,400-volt Fairbanks-Morse alternator with V-belted exciter.

The Borough of Girard began furnishing electric service in 1900 by erecting a modest network of transmission lines and a small steam plant. The plant was run only from sunset to midnight. Nineteen years later, the borough officials retired the inefficient reciprocating engine type of steam plant and purchased electric power from a private utility, retaining the distribution system.

By 1936, although the cost of purchased power had been reduced to 18.2 mills per kw-hr., Borough Engineer Harold Duff and other civic officials calculated that they could produce their own power at a substantial saving. The voters were consulted, and supported their officials' judgment by voting a bond issue for the purchase of generating equipment. On March 14, 1937, the first two diesels went into operation. Within a year, the extent of the savings was evident, for production costs were only 9 mills per kw-hr. A third engine went into operation on October 1, 1938, and a fourth on August 1, 1941. Load and production climbed steadily and costs went lower still.

The war put an artificial ceiling on the consumption of electricity, and peak loads actually declined from a high of 592 kw in 1941 to 480 kw in 1943. During the later war years, the diesels met the ultimate test of economy. With sales held down and all costs pushed skyward by general inflationary pressure, the peak cost per kw-hr. was still 7.5 mills lower than the cost of purchased power.

When the ceiling came off, demand shot up with renewed vigor, reaching 675 kw in 1945 and 780 kw in 1946. The answer, of course, was more diesels, and the fifth unit went into service on February 1, 1947. Despite higher prices, in 1946 the cost of producing a kw-hr. was again only 9.7 mills and a further reduction is in prospect.

OPERATING PERFORMANCE TABLE

Year	*Gross Kw-hrs. Generated*	*Gals. Fuel*	*Gals. Lube*	*Kw-hrs. Per Gal. Fuel*
1937	1,244,200	106,273	1,387	11.70
1938	1,551,000	129,624	1,510	11.96
1939	1,725,200	145,837	1,552	11.83
1940	1,972,200	165,579	1,835	11.91
1941	2,326,900	195,843	2,093	11.88
1942	2,242,500	188,126	1,862	11.92
1943	2,140,000	181,462	1,921	11.73
1944	2,377,200	198,270	2,072	11.98
1945	2,559,600	213,626	2,178	11.98
1946	3,196,500	265,444	2,543	12.04
10-Year Totals	21,335,300	1,790,084	18,953	11.92

Community Benefits

In addition to supplying light and power, the plant gives the following benefits to the Borough:

1. It produces enough earnings so that the people pay only token taxes amounting to a total of less than $5,000 a year. Power-plant earnings pay all the rest of the expenses of government and public improvements.

2. It provides funds to pay off $15,000 of sewage-disposal bonds, and funds will be available to meet a $22,000 bill for new sewers.

Without a Falter

3. It made possible the purchase of property for a projected new municipal building at a cost of $12,500.

4. Every year, an average of $2,500 is contributed for street paving. Street light is also a gift from the power plant.

The heavy-duty diesels are of the 2-cycle, crankcase-scavenging design which has been successful in hundreds of similar installations. Fuel feed to the engines is regulated to meet varying load by individual Type IC Woodward governors. The No. 3 fuel oil is unloaded by gravity into two 10,000-gallon underground-storage tanks from which it is pumped by a motor-driven 1-inch internal-gear F-M transfer pump through a Niagara meter to individual day tanks for each engine. The day tanks also are underground, and fuel is drawn from them through filters by pumps built into the engines.

The diesels are lubricated with Texaco Algol. The success of lubrication is demonstrated by the continuing efficiency of three engines after each one has operated more than 45,000 hours on a single set of rings. The plant has never had a stuck ring, and only two main bearings have been changed in 10 years.

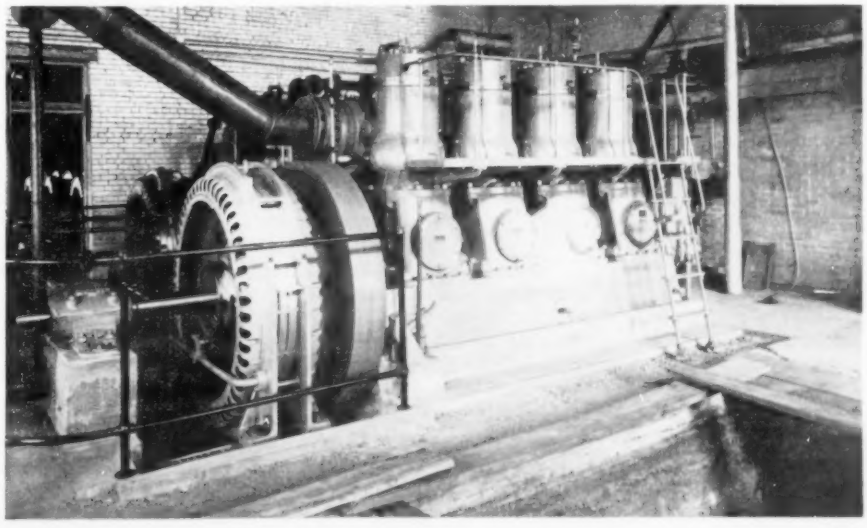
The 10-panel Allis-Chalmers switchboard has A.C. voltage regulators and Westinghouse watt-hour meters and recording meters.

Cooling Water Duties

The cooling-water system is highly flexible and affords the engines maximum protection. All water for the entire community as well as the plant is supplied by three F-M well pumps. Engine-jacket water is treated in a Permutit softener and circulated through the engines and the tubes of two heat exchangers (a Sims and a Schutte-Koerting) by two 300-gpm Fairbanks-Morse centrifugal pumps driven directly by 5-hp induction motors. Another pair of identical pumps send raw water through the exchanger shells, a Marley atmospheric cooling tower, and a Yates-American radiator. The plant is so arranged that the tower and radiator can be used singly or together. Similarly, either or both heat exchangers can be used with any combination of engines. A fifth pump has been ordered to provide added standby protection. The radiator is used almost continuously in cold weather, so that waste heat may be employed to heat the building.

An alarm panel, with Marshalltown pressure gauges and Minneapolis-Honeywell thermometers, warns the operator if jacket-water temperature goes above 140° F., or if soft or raw water pressure drops below the prescribed minimums. Exhaust temperature at every cylinder can be checked by means of the multipoint Alnor and Brown pyrometers. Included on the 10-panel Allis-Chalmers switchboard are a. c. voltage regulators and Westinghouse watt-hour meters and recording meters.

Engine air is drawn from outside the plant through Air Maze multimaze filters for each unit. Exhaust gases for all but the No. 4 engine vent through Maxim silencers. The No. 4 unit has a Burgess snubber.



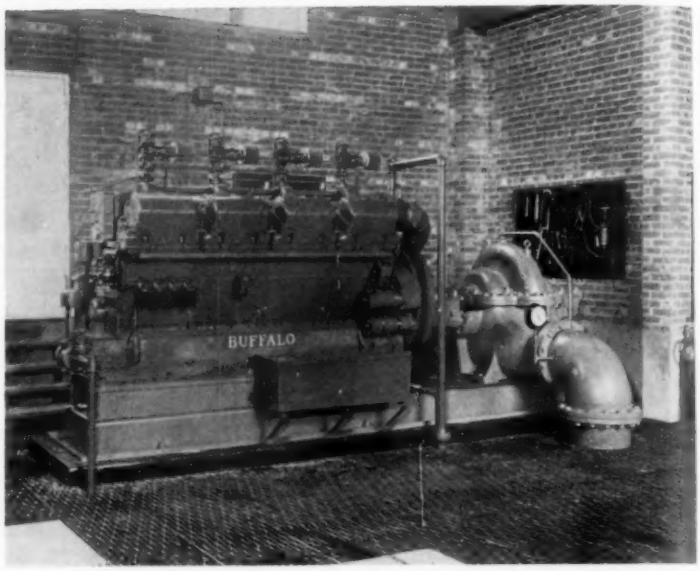
When the Girard plant was extended in 1941, officials left room for further expansion if required. This proved to be a foresighted policy since it allowed the installation of a fifth engine in 1947. The hole in the foreground means that a sixth engine is on order. The original three are visible in the far background through the door.

Standby Protection

Gasoline-powered 12-mgd pump takes the "worry-factor" out of the Montclair, N. J., water system

LIFE has been just a bit more comfortable for Water Superintendent Charles Bourgin, Montclair, N. J., during the past year. This is worthy of comment, since last winter he piloted his community's water system through the toughtest weather in its water-department history, and yet enjoyed this feeling of comfortable security.

What brings him this atmosphere of relaxation and lack of worry is not a new easy chair, pipe, or pair of slippers that he uses after the work at the office is finished; it is a big, rugged, 16-cylinder Buffalo gasoline engine, and a 12-mgd DeLaval centrifugal pump in his main pumping station. He has teamed these two together to take over the responsibility of supplying water when electric distribution for his regular electric supply fails, and if water use threatens his reserve storage.



This big gasoline-powered pump supplies the reserve protection that takes much of the worry out of Montclair's water distribution problems.

Has Alternate Supplies

Montclair gets its water supply from the Wanaque system, and has in addition several alternate sources. Although all these supplies come to the community by gravity, they still require pumping for distribution to the water users. In addition to Montclair, the Water Bureau supplies water to Glen Ridge, Cedar Grove, and outlying sections of Orange, West Orange, Verona, Little Falls, Clifton, and Bloomfield.

Before the arrival of the new standby equipment, the main pumping station had a capacity of 8.7 mgd. The original design of the pumping station, built in 1930, contemplated some sort of standby pumping service in case electric power failed. However, none had ever been supplied.

Peak Demand vs. Power Breakdowns

Because of increased use of water and not-fully-developed storage facilities, the peak capacity of the station has been reached almost every summer. Power and electrical equipment failures have occurred, but fortunately not during times when the station was being pushed to a maximum capacity.

Because of the intermittent service that the standby pump would have to provide, the Water Bureau selected the lower-cost gasoline engine over the more-expensive-in-first-cost diesel with its lower operating cost.

Close-Quarters Construction

The installation of a diesel engine large enough to meet the pumping station requirements would have meant at least an additional $5,000 extension to the pumping station, since this type of equipment is so much larger than the gasoline-engine types. Even with the gasoline engine, Superintendent Bourgin found the installation a tight fit. The distance from the pump end to the wall is 20 inches. The distance from the side of the engine to the side wall is about 4½ feet, much of which is taken up with the discharge piping and the 12-inch Chapman cone valve not shown in the picture. Despite this, there is ample room to walk around the unit for all service and operating functions.

The installation of the Shaw-Box crane, Superintendent Bourgin has found, is important. Much of its cost was defrayed by reduced pump installation cost. He has put it to good use twice since it has been installed, thereby cutting labor costs and making the work much safer.

No More Flow-Reversal Troubles

Before the installation of the pump, failure of power or water supply or a breakdown of main equipment at this main station necessitated the introduction of an emergency water supply to the central Watchung Avenue pumping station. This produced a reversal of flow in many mains which, together with a different quality of water, would tend to produce a turbid supply. The users would naturally use that much more to try clearing the situation, a procedure which in turn would put an added burden on the system at a time when an emergency condition already existed.

Can Incentive Taxation Solve The Housing Shortage?

By EDWIN H. SPENGLER
Professor of Economics
Brooklyn College

IN AN article appearing in the March issue of the *National Tax Journal*,* Professor Jean Bronfenbrenner has proposed an incentive tax for the alleviation of the housing shortage. This proposal, offered as an alternative to either rent de-control or the public rationing of housing, would impose an excise on housing in cities and towns suffering from an acute lack of residential quarters. The tax, to be collected annually from the tenant at a rate of approximately 3% of the capital value of the building or apartment, would be subject to a scale of exemptions based upon the degree of occupancy. The full tax would be payable only in cases where there are four or more rooms (200 square feet or smaller in size) in excess of the number of residents, including lodgers; partial exemption is provided in instances where there are three or two rooms in excess, and full exemption is allowed to occupiers of housing who have only one room more than the total number of occupants of the dwelling unit. Tax receipts would be used to subsidize the construction of local housing projects. However, the primary object of this tax proposal is regulatory; i.e., to effect the redistribution of housing space rather than to raise revenue.

In defense of the plan, it is argued that a substantial tax burden would persuade people to use their housing space more economically. There would be an incentive to rent out rooms to lodgers, and families would be encouraged to transfer to smaller quarters or to move in with relatives and friends. Thus, under the lure of exemption from this tax, the shift in occupancy of existing housing facilities would result, it is said, in a substantial improvement in the availability of rooms and apartments.

Proposal Questioned

While special excises have sometimes been used effectively as regulatory devices to encourage or discourage certain types of economic behavior, it is difficult to see how the present tax proposal could be justified on these grounds. In the first place, it is a well-known fact that, in the majority of American cities, residential construction failed to keep pace with the deterioration of existing dwellings and with the growth in population. As a result, the vacancy ratio in habitable structures rapidly approached the zero point. The unprecedented search for shelter during and after the war stimulated the conversion of private homes into multiple-dwelling structures and led to the remodeling of large apartments into smaller units. Residential construction in the post-war period was stepped up rapidly and by the end of 1947 building permits issued in 120 cities (Dun & Bradstreet figures) indicated that construction activity would soon exceed the all-time peaks that were reached during the years 1922 through 1929. In spite of this, more than 2,000,000 families are at present obliged to double up with other families or are living in makeshift quarters. (The United States Census estimated on the basis of 1947 surveys that 2,750,000 married couples were living in other families' households and that another 500,000 families were occupying transient or non-family quarters.)

Space Not Forthcoming

In the light of existing pressures to obtain dwelling accommodations, it is not likely that a tax on excess room space would produce significant additions to current offerings of rentable quarters. Financially independent owners who have not been inclined to lease additional space in their buildings, despite the attractive rentals that could be obtained, would not be easily persuaded to change their policies because of the threat of increased tax burdens. Furthermore, with the exception of the relatively few higher-priced suites and duplex and pent-house apartments, the majority of the units in modern multiple-dwelling structures are two-, three-, and four-room apartments. Occupants in the latter units would not be expected to have much excess space available, while those in the former would probably not relinquish their rooms because of the tax.

The plan, as outlined, seems to place the heaviest burden upon residents of the larger one- and two-family homes with living quarters of five and six or more rooms. Many of these houses have one or two spare rooms that could be used for emergency housing, but extensive remodeling costs are generally encountered in converting them into separate apartments. The renting of rooms to boarders or lodgers might be inconvenient or against the best interests of the resident family. Compulsory billeting or rationing policies might compel these householders to give up their surplus room space, but such practices would be politically unwise during peacetime. The strict enforcement of tax measures that have substantially the same goals would undoubtedly be opposed with equal fervor.

A tax of as much as 3% of the capital value, when imposed upon the private home owner, is tantamount in most jurisdictions to the doubling of his property taxes. Regarded as a penalty payment because of the failure to take in extra lodgers, or to double up with relatives in the use of housing facilities, the levy could not be defended either in terms of the ability-to-pay principle or on the basis of benefits received.

Shortcomings from Social Point of View

Admittedly a low revenue producer, the proposed tax also has some shortcomings from a social point of view, with its arbitrary rule that "the number of rooms do not exceed the number of residents plus one." This virtually limits a family to a kitchen, living room and private bedrooms, subjecting households to extra taxes for such accommodations as dining room, sewing room, study or den, laundry, and recreation or play rooms. It exempts the overcrowded tenement and taxes the well-planned commodious suburban home. It sanctions the retention of squalid flats with high density populations, and discourages the survival of spacious old homesteads (unless they are converted into lodging houses). It forces a moderate-income family, comfortably housed, to make the choice of joining the ranks of those seeking emergency shelter in smaller quarters, or of bearing additional tax burdens that it can ill afford.

A tax on rentals, especially if it were imposed at progressive rates based upon the scale of rent paid per room per month, might offer some possibilities in local finance as a partial alternative to existing real-estate taxes. At least, it would have the virtue of being based upon some rough approximation of ability to pay. However, when proposed as a *supplement* to the property-tax structure, and as an incentive-tax device designed to alleviate the housing shortage, there appears to be little that can be said in its favor. At best, it might

* Successor to *The Bulletin*, of the National Tax Association.

succeed in making available additional rooms for single men or women and a number of small apartments for young couples or split-up families. It is unlikely that even 5% of the nation's housing needs could be provided in this way. Moreover, the result would probably be a variety of makeshift, temporary arrangements that would leave a permanent scar on the community after the emergency had passed.

A Bold Program Needed

The housing crisis in this country is far too serious to be solved by piddling local incentive-tax, tax-exemption, or rationing schemes that seek to stimulate the more intensive use of existing structures. The truth of the matter is that we must make bold efforts to build enough new dwellings so as to overcome the present severe shortage as rapidly as possible, and to replace dwellings that must be destroyed in the course of a systematic program to get rid of slums and reconstruct blighted areas. We must throw the full weight of private and public effort into the construction of homes during the next several years at a stepped-up annual rate of some 1,500,000 dwellings, until the quantitative shortage is relieved. No halfway measures will suffice!

The first step in this direction should be the prompt enactment of long-range national legislation which would encourage additional private construction and extend the public-housing program. Ultimate success depends upon an increasingly efficient and enlightened building industry and on the responsible and energetic efforts of local housing authorities, planning commissions, and also, of course, on redevelopment agencies.

What The City Can Do About Housing

Text of a speech delivered by Mayor Horace H. Edwards, of Richmond, Va., at the National Public Housing Conference in New York on May 3, 1948

CITY GOVERNMENT is on the spot. Aside from humanitarian considerations, sub-standard housing is a problem in economics, and economic resources today are local governments' major question marks.

Cities pay a heavy price indeed for public services to sub-standard areas, and get in return very little wherewithal to provide services. As a practical matter, however, few cities are able to finance even their general public improvement needs. To make a net fiscal contribution toward rehousing any significant number of people is out of the question. The city's role turns basically on the limitations of its resources.

To an extent, the housing conditions our cities face today are of their own making—lack of city planning and proper zoning, absence of modernized building codes, slowness to extend utility services, failure to give youth and adults adequate skills, insufficient health and medical services—but only to an extent. While few people live in poor housing by choice, the crux of the matter is that every city has (1) a group of unfortunates, incapacitated, skill-less, who have been unable to pay the rent of standard housing, and (2) a group of poorly skilled workers who do not command an income sufficient to afford decent living quarters. Except as local government has defaulted through short-sightedness or backwardness, the responsibility for this housing situation certainly is not local in any realistic sense.

Three-Fold Approach Needed

I believe the role cities can play with propriety is a three-fold one. First, the city may well contribute financially toward adequate housing, at least to the net extent that city government has extra costs as a consequence of present sub-standard housing. This means no net change in local governments' capacity for fiscal survival. Our nation has had experience with public housing; the facts on local benefits and costs are ascertainable. The forms that such city financial support takes depend, of course, on the type of local housing undertaken.

Secondly, the city may well use all its power, influence, and facilities to open the way for federal, state, and private programs aimed at abolishing sub-standard housing. The city can do much toward seeing that the public understands its housing needs. The city can help obtain the necessary legislation for housing action. It can act in its own right or as an agent in planning and in securing building sites for authorized housing projects. It can take the lead in promoting housing programs that are desirable and for which aid is granted by federal, state, or private authorities.

Private enterprise must be encouraged and assisted in meeting all housing needs practicable, before the direct outlay of public funds from any source is practiced. All needs and services that any level of government can offer to enable private enterprise to do the job should be afforded. When neither private builders nor sub-standard dwellers themselves have any prospect of alleviating the existing role of "slum" dwellers—then only should government step in. Government's full participation remains, then, actually non-competitive when it touches only the areas that private enterprise will have no part of, or when it assists private enterprise in doing the job. In calculating costs, we should not overlook the favorable psychological trend for better housing that results from dropping an oasis (new housing) among the "slums." The influence of the old-fashioned American virtue of "keeping up with the Jones" is still with us.

Thirdly, the city may well—in fact, must—do a complete job—not the part-way job of the past—of equipping its youth. The new generation must have the skills, education, and health requisite for economic security and its complement, adequate and decent housing for wholesome environment and happy living. Everything the locality can do toward fuller and better employment opportunities will help in the long run. In other words, the city can, through better local services and the careful enforcement of laws affecting housing, do its utmost to keep its future citizens from being forced into sub-standard housing, willingly or unwillingly.

FREE BIBLIOGRAPHY

The bibliography, *Some Helpful Books and Pamphlets on Community Planning and Control of Land Uses*, published in the March 1947 issue of *The American City*, has been reprinted in leaflet form for free distribution.

How Denver Extends Mains Upon Its Citizens' Request

A "Quick-Way" shovel makes it possible for the Denver Water Board to perform heavy work quickly anywhere in the system.

A trenching machine makes it possible to extend mains quickly and at low cost.

WHERE it is necessary to extend a distribution main in order to serve an applicant inside the city limits, Denver's Board of Water Commissioners will, upon written request, make such extensions at its own expense, provided that the extension is not greater than 75 feet per customer.

If the main extension is greater than this, it is made under either of the following two methods, selected by the applicant:

1. A deposit will be required to cover the amount exceeding the cost of the free extension. The depositor will be refunded this amount as new water users connect to this extension. The revenue from the new water users, connecting to that portion of the extension on which the deposit was made, will be earmarked for this refund. If two or more applicants request the original extension, each one will receive a refund in proportion to the deposit he made. The refund period covers the first five years after completing the extension.

2. A deposit will be required equal to the amount in excess of the cost of the extension granted free. Such deposit will be refunded proportionately to the deposit made by the applicant or applicants, in an amount equal to the cost of installing 75 feet of the main extension for each new service attached directly to such main extension during the first five years after its construction.

In no case is the refund to exceed the amount of the original deposit. No refund will be made from fire-hydrant revenues or from revenues derived from service supplied from that part of the main extension installed at the expense of the Board of Water Commissioners.

Where, in the judgment of the Board of Water Commissioners, it is advisable to make an extension of larger-size pipe than that required by governing specifications than the deposit required, the deposit shall be based on the estimated cost of the size of the pipe required to serve the applicants, and the increased cost for installation of larger pipe shall be paid by the water department.

This policy, according to George F. Hughes, Executive Secretary for the Board of Water Commissioners, has been in use for about 12 years, and works satisfactorily both for the customer and the Board.

Installation of the main extension is under the supervision of the Superintendent of the City Pipe System. In 1947, over 18 miles of various sizes of pipe were installed. Trenching machines are used for excavating and a truck-mounted crane takes care of lowering the pipe in the trench with a dragline backfiller for replacing dirt. Specially constructed bodies mounted on truck chassis are used for hauling the pipe to the job.

Considerable time is saved by placing a bunker of dirt back of the bell end of the pipe in order to raise the pipes, so that the necessity of making an excavation for the bell is not required in order to caulk the pipe. After caulking, the trench is partially filled and puddled, thereby supplying a good solid foundation for the pipe. In wet trenches wooden bunkers are used.

How Much Aerial Surveying Saves

BY ordinary means it took about four years to complete 12 square miles of mapping in the Cleveland, Ohio, area. At this rate it would take 150 years to map Cayuga County, at a cost of approximately $6,000 per square mile. By photogrammetric methods, the same work could be done in three years for a total cost of $1,440,000, or 43% of the ground costs, with a time schedule 50 times faster. Virgil Kauffman, president of The Aero Service Corporation of Philadelphia, pointed this out before the American Society of Civil Engineers' spring meeting, held recently in Pittsburgh.

Mr. Kauffman went on to say that in most cities, property surveys are difficult because of inaccuracies in surveys made over a long period of time and because of errors in deed records. Large-scale aerial maps aid greatly in finding these errors. With the mosaic as a base map, almost any group of deeds can be plotted on a transparent overlay, thus saving much field work.

Milwaukee Modernizes Its Sewer System

By LLOYD D. KNAPP, *Supt.*
Bureau of Sewers
Milwaukee, Wis.

Soil conditions require sheeting this ditch.

APPROXIMATELY $2,000,000, or more than the total expenditures for 1946 and 1947, is being spent in Milwaukee this year for sewer construction. Construction includes relief or relaid sewers in the older sections of the city, and new sewers in the outskirts where housing is being built.

Modernization in the older parts of the city has been instituted in many cases to correct overloading of present sewers. Many of the existing combined sewers have proved to be inadequate in size. The city has had many complaints about flooded basements during heavy rains. Many of these sewers are over 50 years old, and have structural failures, particularly in the concrete-pipe sewers made with natural cement.

In some cases, the city has found that the best solution is the construction of a relief sewer, frequently a tunnel, to relieve the load on one or more of the main branch sewers. In cases of structural failure where even the smaller sizes of pipe are inadequate, the city relays the sewers, using proper sizes and grades to meet present-day and, we hope, future conditions.

During construction, dams are erected, and the dry-weather flow is pumped through a pipe flume around the work site. Individual house sewers give some trouble, of course, but are connected to the new sewer as quickly as possible.

Contractors conduct their work so that in case of rain the dams are easily removed and the storm water may flow out of the old sewer, through the site of the work, and thence into the new sewer without excessive damage.

The city has found these jobs expensive, even apart from present high prices. It is necessary to use tight sheeting as the ground is unstable because of many other near-by trenches. The sewer trench is crossed at frequent intervals by water and gas services. At best, the jobs are wet and dirty, and skilled labor that understands this type of work is not readily available.

Bids, opened for relay work in February of this year, were typical. They covered pipe for combined sewers. The two large sizes were reinforced, and all were laid in a 5-inch concrete cradle. The manholes were to be built either of concrete brick or concrete block with frames, covers and steps furnished by the city. The bid prices were as follows:

15-inch sewer pipe 12½ feet deep
$15.00 per foot
18-inch sewer pipe 13½ feet deep
$18.00 per foot
24-inch sewer pipe 13¾ feet deep
$23.90 per foot
27-inch sewer pipe 14¼ feet deep
$25.90 per foot
3½-foot-diameter manholes
$180 each

A 66-inch storm-relief tunnel of monolithic concrete recently was awarded for $79.50 per foot. The ground is not uniform, being partly sand and gravel and partly clay, but on the whole, the tunneling conditions have been very good.

Average prices for 8-inch concrete sanitary sewers without cradles and at depths of about 11 feet, and using the excavated material for backfill, as now being laid in the outskirts, run about $3.00 to $3.50 per lineal foot, while 12-inch storm sewers at depths of 4 or 5 feet average from $2.60 to $3.25 per lineal foot, manholes in all cases being additional.

For many years the city has used concrete pipe for storm and sanitary sewers in residential and local business districts. In manufacturing areas where corrosive wastes may be encountered we use vitrified clay pipe. Sewers over 36 inches are built of monolithic concrete and lined with clay liner plates.

The work is being handled by local contractors. They are now working at 100% capacity, and because of the equipment and labor shortages cannot be expected to do more. It is particularly hard to find sufficient sewer masons to build the necessary manholes and catch basins. Such conditions do not bring out the most desirable competitive bidding.

The work is under the direction of the engineering division of the Bureau of Sewers.

Except for certain locations, concrete pipe is used throughout the sewer system.

Out-Of-City Water Charges –

What lies back of an increased water-rate charge to customers living outside the city? This is the second of a series of articles on water charges, the first of which appeared in the April issue of *The American City*.

WHY should a customer beyond the city limits pay more for water than his neighbor just within, when water rates rather than property tax presumably support the water service?

This question arises often and causes its share of ill feeling, particularly among those on the far side of the city boundary. Among municipally owned water services this increase may vary all the way from 20 to 100%. These variations are not particularly consistent, but appear based primarily on how the water department officials and the city fathers feel at the time the rates were prepared.

Let us look at the first important consideration. Is such a differential justified?

In the case of municipal water supplies, it is. The water service originated through the enterprise of the people in the community. When it was originally built, in most cases the people in the community had to pledge the integrity of the community to make the service financially possible. The fundamental purpose of the service was, and still is, to serve the people in the community alone. Thus, if anyone else asks for service after this preliminary work has been done, he should expect to pay more than those who have backed it from the start.

In addition, there is that tender subject of people who move outside the city limits to escape the city taxes and yet want to live close enough to enjoy the city's benefits.

But all this does not give a clue as to the amount of the differential that a city can charge and still be fair.

Charges Based on Distance

From a purely technical standpoint, one might logically state that water rates should increase as pumping costs go up. L. R. Howson, of Alvord, Burdick and Howson, a consulting engineer who has done a great deal of work on the subject of water rates, pointed out a year ago at the San Francisco American Water Works meeting that water service is a combination of *supply* and *transportation*. From the latter viewpoint, the further the transportation the greater the charge. There is available much thought-provoking literature on this subject.

The difficulty seems to be that this often works against the community itself. Often the water supply is located beyond the city limits. From a pumping standpoint, those within the city would be penalized and those outside would be able to draw from the supply at low pumping cost. It may be accurate technically, but it would tend to complicate a rate schedule and confuse the water users.

The reason is plain why a private company does not generally make such differential based on political boundaries. The company is interested in selling water. The company would like to use the capacity of its plant to the fullest. The more water sold, the more income to the company. If it can build an extension that in three or four years will yield enough income to pay the cost involved, it is going to do so as a sound business investment, regardless of the political boundary.

It is possible that a city may adopt this policy also. Most communities try to set up the water service as a municipally owned business. Let us assume that in accord with these business principles the community government pays its just share to the water department for fire protection in the form of hydrant rental. Let us assume, furthermore, that as a business the water department pays to the community a just amount representing taxes. Let us go a step further: since the water service is a business whose stock is owned by the community, as stockholders the community is entitled to a fair return on its investment. Consequently, it is fair for this water service to pay some equitable amount, such as 3 or 4%, to the community as a dividend.

Thus it is apparent that the water service brings to the community fund an amount representing taxes and a dividend on its investment. Under this arrangement, the more water the community sells, the more its general fund is enriched. And it obviously is to the advantage of the people in the community to encourage the sale of water. If the water department authorities feel that those outside the city limits should still pay, they should hold the differential to a low enough figure that it will not discourage those close to the system from connecting to it.

Under these conditions, a city should charge its water customers outside the city limits enough additional to meet the fire-protection cost normally paid by the city through hydrant rental. Since the outlying area generally is unincorporated, and the people want the benefits of fire protection, there is no way of collecting this except by increasing the rates slightly.

Therefore, a city's water department can justifiably increase out-of-city residential rates in an amount representing this fire-protection charge that the people in the city have to pay through real estate taxes. Differentials beyond this should be kept low enough to permit those close to the system to utilize it.

These are hypothetical cases, however. Rare indeed is the community that sets up its water service along these businesslike lines. More frequently the community government ignores the fire-service charge and it makes no particular attempt to have a sum returned to the city government based on a fair tax value or a fair dividend return. Very frequently the water department is called on to provide free service, often unmetered, to other municipal services and to churches, schools, and service organizations. Thus a confusion exists as to the true business status of the department. About all one has to go by is the actual operating expense and the income derived from water rates. If the balance is favorable, the department is said to be operating profitably.

Differential Charges Justified

We can say in summarizing that a municipally owned water service is justified in making some sort of differential charge to those outside the city limits or even to deny service outside the city limits in order to protect the interests of the community it serves.

We can say further that if it wishes to run the service as a money-making business, then it should hold this differential to a minimum or abolish it entirely, but see that sound business principles prevail in the operation of the service. This would include a fire-protection charge by the community in the form of a hydrant rental; it would include a payment made by the water

service representing a fair tax assessment. It would also include an equitable payment representing a fair dividend that a stockholder in a well-operated public utility could expect to obtain.

Under this arrangement, the greater the sale of the water, the greater the dividend to the community and the richer its general fund would be. And the people within the community would be the sole beneficiaries.

Riverside, Calif.

Rates Per month (domestic)

First 1,500 cu. ft. in accordance with the following:

⅝" meter	$1.50
¾" "	2.00
1" "	2.50
1½" "	3.25
2" "	4.00
3" "	6.00
4" "	8.00
Next 2,000 cu. ft.	7c per 100 cu. ft.
All additional	6c " " " "

Industrial Rates

First 5,000 cu. ft. at same schedule as domestic users.

All in excess at 6 cents per 100 cu. ft.

Delinquent accounts have service discontinued if not paid 7 days after delivering 2d month's bill. Service charge is $1.00.

A public-fire-hydrant charge of $5,000 per year is made against the fire department.

Private fire-hydrant-rental charges are 75 cents per month for one and 50 cents per month for each additional.

Charges for service taps are as follows:

¾"	$28
1"	$33
2"	$70
3" and over	At cost

General Data

Population served	50,000
Services 95% metered	12,746
Hydrants	898
Miles of mains	219
Service levels	3
Storage, overhead	24 mg
Supply	Wells
Treatment	None
Average demand	9.4 mg
Plant capacity	22.75 mg

Water Characteristics

$CaCO_3$	0
Fe	Trace
Mn	0
pH	7.0
Temperature	70—76° F.

Customer Costs

3,000 gals. (400 cu. ft.)	$1.50
5,000 gals. (667 cu. ft.)	1.50
10,000 gals. (1333 cu. ft.)	1.50

The daily use of water averages 200 gallons per capita. The department makes no contribution to the city's general fund, nor does it receive any funds from the city for fire protection. However, all costs of operation, including retirement of bonds, have been paid from department earnings.

LAUREN W. GRAYSON
Superintendent

Galveston, Texas

Rates Per Month

First 125 cu. ft.	$0.75 minimum
Next 10,000 cu. ft.	0.25 per 100 cu. ft.
All over	0.175 " " " "

Minimum Charges

⅝" meter	$0.75
1" "	2.00
1½" "	4.00
2" "	8.00
3" "	16.00
4" "	32.00
6" "	64.00

The rate for fire protection is 60 cents for each 1,000 square feet or fraction thereof of area protected. This is applied to the entire city, regardless of the type of property served. For water furnished to ships and similar water craft, the charge shall be 60 cents per 130 cubic feet. When such water is not furnished through a permanently installed meter, the charge is $2.50 additional.

General Data

Population served	81,000
Services (99% metered)	14,733
Hydrants	1,150
Valves	950
Service levels	2
Miles of mains	125
Storage, ground	17.5 mg treated
Storage, pressure	0.65 mg standpipe
Treatment—Breakdown chlorination and Calgon	
Average demand	11.3 mg
Plant capacity	18.0 mg

Water Characteristics

$CaCO_3$	0 ppm	Temperature	70°-81°
Fe	0.2 ppm	pH	7.8
Mn	0.05 ppm		

Consumer Costs

3,000 gals. (400 cu. ft.)	$1.44
5,000 gals. (667 cu. ft.)	2.10
10,000 gals. (1333 cu. ft.)	3.77

Rates were adopted August 16, 1946, and represent a 25% increase. The rate increase provides money for General Fund use and not for water department operation. The 1947-48 revenue is estimated at $700,000. Budgeted Water Department expenditures are $330,358.

HENRY WILKENS, JR.
Galveston Water and Sewer Department

Santa Ana, Calif.

Rates, per month

First 1,000 cu. ft. or less	$1.35
Next 4,000 " " " "	.13½ per 100 cu.ft.
Next 20,000 " " " "	.11 " " " "
Next 25,000 " " " "	.09 " " " "
All over	.05 " " " "

Minimum Charges

⅝" or ¾" meter	1.35
1" service	1.75
1½ "	3.10
2" "	4.45
3" "	6.50
4" "	9.80
6" "	14.75

General Data

Population served	43,000
Services (metered 100%)	12,569
Hydrants	683
Population served	43,000
Valves	1,200
Miles of mains	126
Supply—Furnished by the Metropolitan Water District, California.	

Customer Costs

3,000 gals. (400 cu. ft.)	$1.35
5,000 gals. (667 cu. ft.)	1.35
10,000 gals. (1333) cu. ft.	1.80

H. M. NEIGHBOUR
Water Superintendent

Washington, D. C.

Rates (on annual basis)

Effective July 1, 1947

First 7,500 cu. ft.	$10.95 minimum
All over	.09 per 100 cu. ft.

General Data

Population served	
(Retail—D. C.)	900,000
(Wholesale—Arlington Co., Va.)	12,000
Washington only	
Services (90% metered)	123,084
Hydrants	7,386
Valves	19,539
Service levels	7
Miles of mains	1,112
Storage overhead	2.75 mg
Storage, ground	raw 115 mg
	treated 106 mg
Supply	River
Treatment — Alum, super-chlorination (sulphur-dioxide), rapid and low filtration, lime, post chlorination	
Average demand—Washington	149.2 mgd
Arlington	9 mgd
Plant capacity	185 mgd

Water Characteristics

	Raw	Treated
$CaCO_3$ ppm	69	78
Fe	0.03	0.03
pH	7.8	7.6
Temperature	54	57

Customer Costs (prorated per month)

3,000 gals. (400 cu. ft.)	$0.91
5,000 gals. (667 cu. ft.)	0.95
10,000 gals. (1333 cu. ft.)	1.55

D. V. AULD
Superintendent, Water Division

Wichita Falls, Texas

Rates (per month)

Per 1000 gals.		Inside City Min.	Outside Min.
First	4,000 gals.	$1.50	$2.00
Next	6,000 "	0.30	0.375
"	20,000 "	0.29	0.3625
"	20,000 "	0.28	0.35
"	50,000 "	0.27	0.3375
"	50,000 "	0.26	0.325
"	150,000 "	0.25	0.3125
"	200,000 "	0.24	0.30
"	250,000 "	0.23	0.2875
"	250,000 "	0.22	0.275
"	1,000,000 "	0.20	0.25

General Data

Population served	70,000
Services (100% metered)	12,938
Hydrants	465
Miles of mains	103
Supply	River
Treatment	Coagulation and Filtering
Average demand	7 mgd
Plant capacity	16 mgd

Water Characteristics

Carbonates	46 ppm
pH	9.2
Iron	None

Customer Costs

3,000 gals. (400 cu. ft.)	$1.50
5,000 gals. (667 cu. ft.)	1.80
10,000 gals. (1333 cu. ft.)	3.30

These rates were established long ago and may have an excessive number of blocks. We do not charge hydrant rental except against private hydrants. Our contribution to the city's general fund amounts to more than would taxes on a privately owned utility.

A. J. GATES
Water Superintendent and Engineer

Whittier, Calif.

Rates Per Month

First 1,000 cu. ft. or less	$1.25
Next 4,000 cu. ft.	.10 per 100 cu. ft.
Next 5,000 cu. ft.	.08 " " " "
All over	.05 " " " "

Rates charged outside city limits are

10% higher. When water is used for irrigation, no charge will be made during months that water is not used.

General Data

Population served	20,113
Services (100% metered)	5,944
Hydrants	435
Miles of main	76.3
Service levels	One
(pressure varies from 60-240 p.s.i.)	
Storage	18 mg high-level reservoir
Treatment	None
Average demand	3.2 mgd average
Plant capacity	8.6 mgd
Supply	Wells

Customer Costs

3,000 gals. (400 cu. ft.)	$1.25
5,000 gals. (667 cu. ft.)	1.25
10,000 gals. (1333 cu. ft.)	1.58

The water department makes no charge to the city for fire protection nor does it make any contribution to the city's general fund.

M. R. Bowen
City Engineer

Mason City, Iowa

Rates

First 3,000 cu. ft.	28c per 100 cu. ft.
Next 6,000 cu. ft.	16c " " " "
Next 7,500 cu. ft.	12c " " " "
All over	7½c " " " "
Minimum charge	50c " " " "

Bills are subject to a 10% penalty after due date.

General Data

Population served	30,000
Services (100% metered)	6,533
Hydrants	430
Miles of mains	76
Service levels	One
Storage, ground	4 mg
Storage, overhead	1 mg
Supply	Wells
Treatment	Chlorination
Average demand	2 mgd
Plant capacity	12½ mgd

Water Characteristics

$CaCO_3$	360 ppm		
Fe	0.4 ppm		
Mn	0.02 ppm		
pH	7.1		
Temperature	56° F.		

Customer Costs Per Month

3,000 gals. (400 cu. ft.)	$1.12
5,000 gals. (667 cu. ft.)	1.87
10,000 gals. (1,333 cu. ft.)	3.73

C. W. Hamblin
Water Superintendent

Mount Vernon, N. Y.

Rates (on quarterly basis)

First 1,000 cu. ft.	$2.00 (min.)
Next 49,000 cu. ft.	20c per 100 cu. ft.
Next 50,000 cu. ft.	17c per 100 cu. ft.
All over	15c per 100 cu. ft.

The department also maintains miscellaneous charges for water used for building purposes. It furthermore makes the following charges for private fire protection:

Private fire hydrants	$65.00 per year
Private Foamite connections	$65.00 per year
Automatic sprinkler systems	
No inside hose openings—10c per head per year	
Inside hose openings	
3" fire service meter	$ 40.00 per year
4" fire service meter	80.00 per year
6" fire service meter	160.00 per year

General Data

Estimated population served	75,000
Services, all metered	9,600
Hydrants	1,053
Valves	2,854
Miles of mains	100.5
Average demand	5.6 mgd
Plant capacity	29 mgd
Supply—	
Purchased from New York City, Catskill-Delaware aqueduct.	

Customer Cost Per Month

3,000 gal. (400 cu. ft.)	$0.80
5,000 gal. (667 cu. ft.)	1.33
10,000 gal. (1,333 cu. ft.)	2.67

J. Morris Yules
Commissioner

Richmond, Va.

Within city limits

Minimum on each meter per month, $1.00 payable in advance.	
First 10,000 cu. ft.	15c per 100 cu. ft.
Next 10,000 cu. ft.	11c per 100 cu. ft.
Next 10,000 cu. ft.	9c per 100 cu. ft.
All over	6c per 100 cu. ft.

Outside city limits

Minimum on each meter, $2.10 payable in advance	
First 25,000 cu. ft.	30½c per 100 cu. ft.
Next 5,000 cu. ft.	9c per 100 cu. ft.
Next 170,000 cu. ft.	7c per 100 cu. ft.
Over 200,000 cu. ft.	6c per 100 cu. ft.

General Data

Population served	226,000
Services (all metered)	51,144
Hydrants	3,149
Valves	278
Miles of main	516
Service levels	4
Storage, ground, 170 mg raw; 52 mg treated	
Storage, overhead tanks, 2.1 mg	
Treatment	

Algae control, prechlorination, pH adjustment when necessary for coagulation, coagulation with alum or iron salts or both, dechlorination, activated carbon on the filters, filtration, rechlorination and ammoniation to form chloramines, copper sulphate (6 to 9 months), aeration and final pH control with lime.

Average demand	28.3 mgd
Plant capacity	35 mgd

Water Characteristics

$CaCO_3$	55 ppm	pH	8.7
Iron	0	Alkali	25

Consumer Cost Per Month

3,000 gals. (440 cu. ft.)	$1.00
5,000 gals. (667 cu. ft.)	1.00
10,000 gals. (1,333 cu. ft.)	2.10

Marsden C. Smith
Chief Engineer

Fairbury, Nebr.

Rates Per Month

First 5,000 cu. ft.	20c per 100
Next 5,000 cu. ft.	16c per 100
Next 5,000 cu. ft.	13c per 100
All over	10c per 100

Minimum Charges

¾" meter	$1.00	1½" "	3.00
1" "	2.00	2" "	4.00
1¼" "	2.50	4" "	8.00

During the summer months an irrigation rate is allowed of 10c per 100 cu. ft. A discount of 10% is allowed for prompt payment.

General Data

Population served	7,000
Services (100% metered)	1,750
Hydrants	213
Valves	?
Miles of mains	20
Storage, ground	2.25 mg
Storage, elevated	0.3 mg
Supply	Wells
Treatment	Chlorine and Calgon
Average demand	1.6 mg
Plant capacity	1.8 mg

Water Characteristics

$CaCO_3$	160 ppm
Fe	...
Mn	12.0 ppm
pH	7.1
Temperature	55° F.

Customer Costs

3,000 gals. (400 cu. ft.)	$1.00 min.
5,000 " (667 cu. ft.)	1.20
10,000 " (1,333 cu. ft.)	2.40

G. E. Bell
Water Superintendent

Chanute, Kans.

Rates Per Month

0 to 1,200 cu. ft.	30c per 100 cu. ft.
1,201 to 12,000 cu. ft.	21c " " " "
12,001 to 120,000 cu. ft.	15c " " " "
120,001 to 1,200,000 cu. ft.	12c " " " "
All over	10c " " " "

Minimum charge is 50c per month.

General Data

Population served	11,000
Services, 100% metered	Yes
Hydrants	195
Valves	153
Miles of mains	65
Service levels	1
Supply	River
Treatment	Lime Soda Ash
Average demand	1.125 mg
Plant capacity	1.850 mg

Water Characteristics	*Raw*	*Treated*
$CaCO_3$	200 ppm	105 ppm
Fe	0.4 "	0.4 "
Mn	0.05 "	0.05 "
pH	7.0 "	8.6 "
Temperature	40° F.	41° F.

Customer Costs

3,000 gals. (400 cu. ft.)	$1.20
5,000 " (667 cu. ft.)	2.00
10,000 " (1,333 cu. ft.)	2.80

George K. Faust
Water Superintendent

Airport Flight Strip Provides Water Supply

PROBABLY the world's only instance of a flight strip doubling as a watershed to provide adequate drinking water will exist on the Island of St. Thomas, Virgin Islands. It will be part of a public improvement project now being planned by the Bureau of Community Facilities, F.W.A.

The project includes the installation of drainage pipelines for the collection of potable water, and the construction of a high-level water reservoir. The project also calls for a water-treatment plant, water supply, and a water distribution system. The proposed flight strip will be 4,500 feet long by 200 feet wide, so designed that rainwater will drain off into a "catchment," or underground catch basin, with 1½-mg storage capacity. The work will include a fresh-water distribution system and a storage reservoir.

Rockford Reports On Garbage Grinders

A joint study prepared for Rockford, Ill., by

DR. N. O. GUNDERSON
Commissioner of Health

HENRY A. RIEDESEL
Sanitary District Engineer

WILLIAM DAY
City Engineer

RALPH S. LAKE
Plumbing Commissioner

ROBERT B. GALVANONI
Field Sanitarian

What is a domestic garbage grinder?

A DOMESTIC garbage grinder is an electrical motorized device, installed under and in direct connection with the kitchen sink, that grinds or pulverizes all types of domestic garbage, with direct discharge to the house sewer. It thus enables the housewife to dispose of kitchen and table refuse in a neat, sanitary manner without the use of the time-honored garbage can, emptied periodically by the municipality and paid for through taxation.

What problems are involved in the use of domestic garbage grinders?

In simple terms, the use of domestic garbage grinders involves assurance that (1) the food waste will be ground, macerated, or shredded into the finest particles possible, (2) that it will be mixed with sufficient water for flushing, (3) that its chemical composition will not attack the metals of the plumbing fixtures or drainpipes, (4) that its composition by weight can be carried by water, (5) that its composition will not foam, congeal, or cause the formation of excessive gas liable to explode or cause back-pressure, and (6) that it is readily miscible with water.

What city departments are concerned in a possible large-scale installation of domestic garbage grinders?

The City Engineering Department, which constructs city sanitary sewers.

The Rockford Sanitary District, which builds intercepting sewers and operates the sewage treatment plant.

The City Sanitary Sewer Maintenance Department.

The City Bureau of Sanitation, which collects and disposes of garbage and other refuse as referred to in the next paragraph.

The City Plumbing Department, which supervises the installation of domestic garbage grinders.

The Department of Public Health, interested in general environmental sanitation.

How is garbage collected and disposed of in the City of Rockford at the present time?

Domestic garbage is collected with other refuse, once a week the year round, from all residential areas, in white, sanitary, all-enclosed, motorized trucks. Disposal is effectuated by means of what is termed the "sanitary landfill" method, which apparently has proved to be quite satisfactory.

Is municipal incineration of garbage being considered in Rockford?

Garbage may have to be incinerated if and when land is no longer available for the disposal of refuse by the sanitary landfill method.

What does the present sewage disposal system consist of?

The Rockford Sanitary District consists of a system of intercepting sewers and a treatment plant. This plant affords primary treatment, but plans have been prepared, and a bond issue voted, for enlargement with secondary treatment of the sewage for a future population approximating 130,000 people.

Is it theoretically sound to use the sewerage system and treatment plant for the collection and disposal of finely ground food wastes?

Authorities are apparently agreed that it is theoretically and practically sound to use a city's sewerage system and treatment plant for the collection and disposal of finely ground food wastes.

Both food wastes and sewage are highly organic. They are both dangerous to man; they both go through the same processes of decay; and they can both be treated in the same treatment processes in a modern sewage-treatment plant.

Will ground food wastes clog the sewers?

Grinding food remnants makes them suitable for transportation through home plumbing systems, sewers, and sewage-treatment plants.

Is this method of collection an advantage?

Using sewers for the dual purpose of carrying both sewage and equally obnoxious, dangerous, properly ground food wastes, does away with household backyard garbage cans and the street collection of wet, putrefactive food wastes.

Is this system now in use in any cities?

Combined disposal of sewage and finely ground food wastes in the same treatment plant is used in several cities with encouraging economical results.

What is the basic reason for advocating the use of household garbage grinders?

The basic reason is the elimination of the age-old custom of storing putrefactive, odor-producing, rodent-feeding, and fly-breeding organic wastes in the backyard and basement, thus avoiding the street collection of this noxious material for separate disposal.

Do domestic garbage grinders comply with the Rockford City Plumbing Code?

This device is and, of course, must be installed, in compliance with the Rockford plumbing regulations.

How is water for flushing applied to the grinder?

Water for grinding the garbage is supplied from the kitchen faucet, thus providing a system free from cross connections.

How is the unit switch operated?

The unit switch is operated by placing the cover on the grinder opening in the sink, which prevents splattering, and turning the handle to the "on" position. The unit runs only when the cover is safely locked in place.

Is there a water control on the unit?

The installation has an ingenious device called a flow interlock in the cold-water line which is electrically linked to the garbage grinder control switch, and permits the grinder to operate only when a predetermined amount of cold water is flowing from the faucet into the sink and grinder.

What is the amount of water required to operate the grinders?

Normally the interlock referred to above is set at approximately 6- to 8-quart flow per minute.

What is the effect of this amount of water?

This amount of water, coupled with the centrifugal discharge of a semi-pump in the grinder-discharge housing, produces a high-speed scouring action in the sink drain-line, which assures greater freedom from sluggish drains than ever achieved before in the use of a household grinder.

Are there any other benefits of the cold water?

The cold water also aids in solidifying the greases and the high speed grinding and aeration action "homogenizes" the particles into buoyant, non-congealing form.

What about stoppage of drain lines when domestic garbage grinders are installed in homes?

It appears to be the consensus that house grinders produce no stoppage in drain lines. In fact, the bulk of testimony is that formerly sluggish drains are no longer so because of the high-speed scouring action of the home grinder unit. At Schenactady, N. Y., where some 400 to 500 Disposall Kitchen Garbage Grinders are in use, the city inspector of plumbing reports no stoppage from these home grinder units.

How long does a grinder operate?

In ordinary use, for grinding all kinds of food wastes, including bones, but not inert materials such as glass, crockery, oyster shells, etc., the grinder referred to above operates approximately *one minute per capita per day.*

What does this mean in terms of the amount of water used?

The amount of water used for grinding at a rate flow of 1½ to 2 gallons per minute is between 1 and 2 gallons per capita per day.

What is the garbage yield per year in Rockford?

Rockford has an estimated population of 93,000. At a figure of ½ pound of garbage per capita per day, we learn that this city produces about 46,500 pounds, or approximately 23¼ tons, of garbage per day for the entire city.

If every home had a garbage grinder, how much would this increase the load at the sewage treatment plant?

If every home used a food-waste grinder, the total sewage flow would be increased by approximately 1 to 2 gallons per capita per day, or a 1 to 2% increase in flow; the suspended solids in the mixed flow would be approximately doubled; the BOD would be increased 15 to 30%.

Would this overload the Rockford Sanitary District sewage treatment plant?

If such sales did materialize, the effect on the loading of the local sewage treatment plant would naturally be increased. This possibility is no doubt being considered by the consulting engineers now working on plant enlargement.

What can be said about collection costs?

Collection is "free" by means of water-vehicle instead of by expensive backyard manual emptying of garbage cans into trucks operated by the city at great expense to the taxpayers. The costs of burning in an incinerator or disposal by the sanitary landfill method are also high, the latter method being sanitary and cheaper than incineration, but constituting nevertheless a tax burden to the people.

Are there any actual cost figures on the treatment of garbage in a sewage plant?

Fuhrman has estimated that the added cost of garbage treatment in the sewage-treatment plant at Washington, D. C., would run to a figure ranging between $.87 to $1.20 per ton.

How would these figures apply to Rockford?

The City of Rockford produces about 8,486.25 tons of domestic garbage per year. Using the above figures of $.87 to $1.20 per ton, the cost would be between $7,383.04 and $10,183.50, which is very low compared to the present cost of disposal by either the sanitary landfill or incineration methods.

Are there any estimates available on the disposal cost per ton of domestic garbage-grinder food wastes only?

Without a municipal grinder or grinders, the cost of disposal in a sewage-treatment plant of food wastes from domestic garbage grinders only has been estimated to be between 10 and 50 cents per ton. This would change the figures cited above to $848.63 and $4,243.12, respectively.

What about the future use of grinders in cities of about 100,000 people?

The best way, perhaps, to answer this question is to take a city of 100,000 people with 3½ persons per family and assume that this city is completely equipped with household garbage grinders.

Let us assume further that the garbage amounts to ½ pound per capita per day with a total solids content of 25%, and that the average flow is 10,000,000 gallons of sewage per day.

The number of grinders would be 28,600, and the flow of finely ground garbage would be 0.15 million gallons, or an increase of only 1.5% in sewage volume.

With the knowledge gained thus far, is it possible to set forth certain basic facts regarding domestic garbage grinders?

With what is now known about the basic principles and practiced applications of domestic garbage grinders to the sewer system and sewage-treatment plant design and operation, it is possible to set forth the following basic facts:

1. Sewer-clogging:

Solids will not shoal in sewers. Any sewer system or sewage velocity capable of carrying sewage solids will more readily carry food wastes. Compare the heterogeneous nature of sewage solids with the light, uniform-sized, flocculent nature of finely ground food wastes, and it becomes evident that the water-carriage system is an ideal method of transporting this new, mixed, liquid community waste.

2. Settling out:

Mixtures of sewage and food wastes readily settle out of suspension, and can be clarified at the sewage-treatment plant.

3. Increased quantities of gas:

Because of the basic similarity of sewage solids and food wastes, mixtures of normal municipal sewage and food wastes are digestible into a normal sludge, together with the production of increased quantities of gas of satisfactory quality for heating and operating the plant machinery. It could even be sold to the local gas company at a profit.

4. BOD will be raised:

Because of the organic solids added to the sewage by food wastes, the BOD of sewage-garbage mixtures consisting of *all* municipal sewage and *all* municipal garbage, will exceed the oxygen demand of clarified sewage alone by possibly 15 to 30%.

5. Amount of solids may be doubled:

If and when all homes use grinders, the addition of all municipal garbage to sewage would increase the solids load on a treatment plant by an amount depending on the per-capita production of garbage and the strength of the sewage flow, but the solids may be approximately doubled.

6. Gas and sludge fertilizer increased:

The dual disposal of sewage and food wastes will result both in a large increase in sludge-gas production of typical quality and in sludge fertilizer, available for use.

7. No unsolvable problems:

No problems of treatment are involved which cannot be solved by the same engineering intelligence which is today being applied to sewage and industrial-waste treatment.

8. Sewage-plant enlargement:

For the present, this will not have to be done. As to the future, some enlargement will become necessary. The benefits accruing to householders, however, will far outweigh the cost of enlargement.

FOOD WASTE DISPOSAL PROBLEMS

Solved!

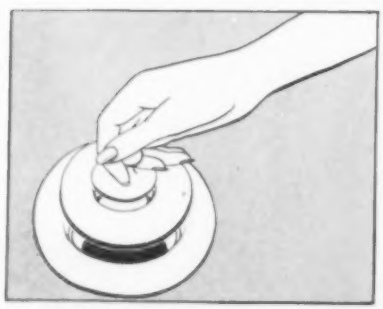
In city after city, the new Kaiser Disposal Unit is meeting approval by Health Departments and Boards of Public Works.

For the Kaiser represents the last word in modern garbage disposal. Its continuous feed operation instantly shreds food waste to a fluid consistency that flows down the drain—automatically disposing of the collection problem. *This* unit is *engineered*—self-cleaning, odorless, absolutely sanitary. It will pay you to investigate.

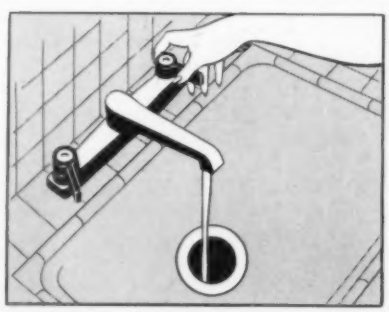
For informative literature, write to Kaiser Fleetwings Sales Corp., 1924 Broadway, Oakland 12, Calif.

KAISER

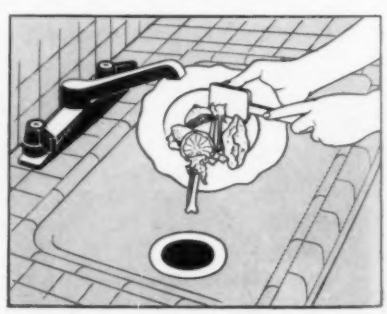
continuous feed disposal unit



The Kaiser Disposal Unit fits any sink having a 3½ or 4 inch drain opening. Closure is removed for continuous feeding or may be replaced after loading.



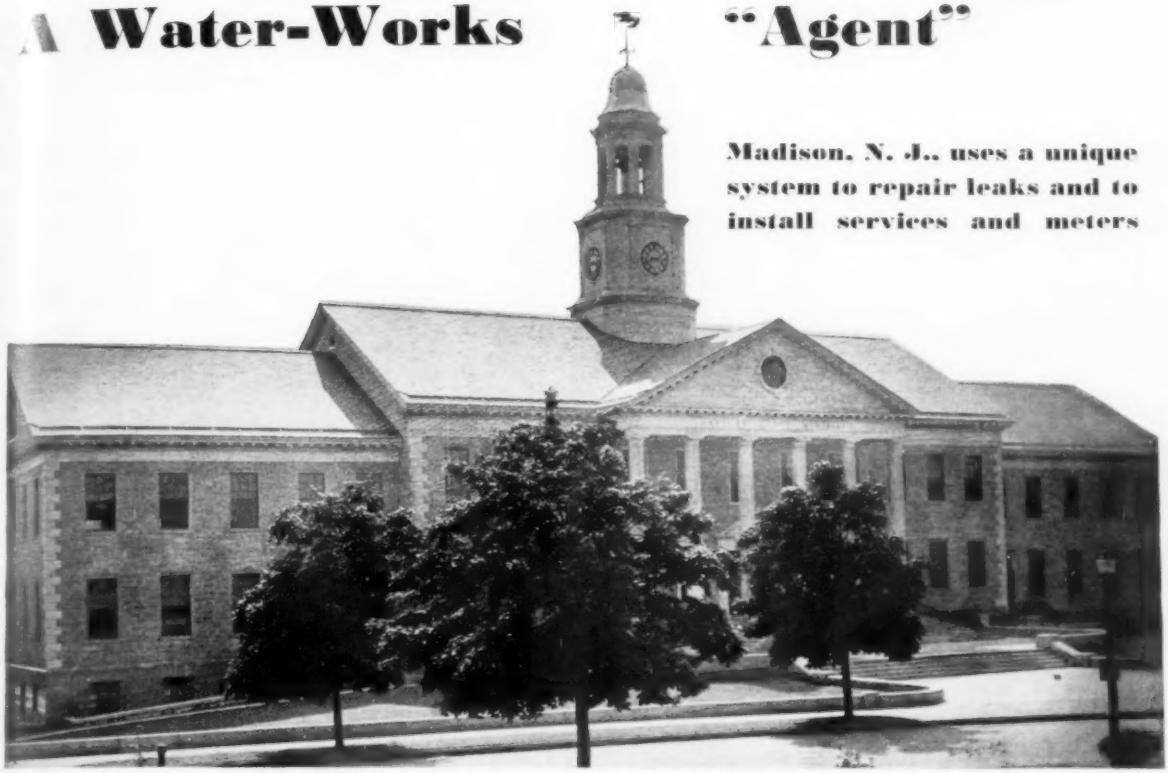
Turn on water for a continuous flow of wastes down the drain. Flick the switch and the Kaiser is in operation—no stopping or starting.



Simple, safe, sanitary, the Kaiser disposes of any amount of food waste. Cooked or uncooked foods, bones, rinds, fruit-pits, all wash away within seconds.

A Water-Works "Agent"

Madison, N. J., uses a unique system to repair leaks and to install services and meters



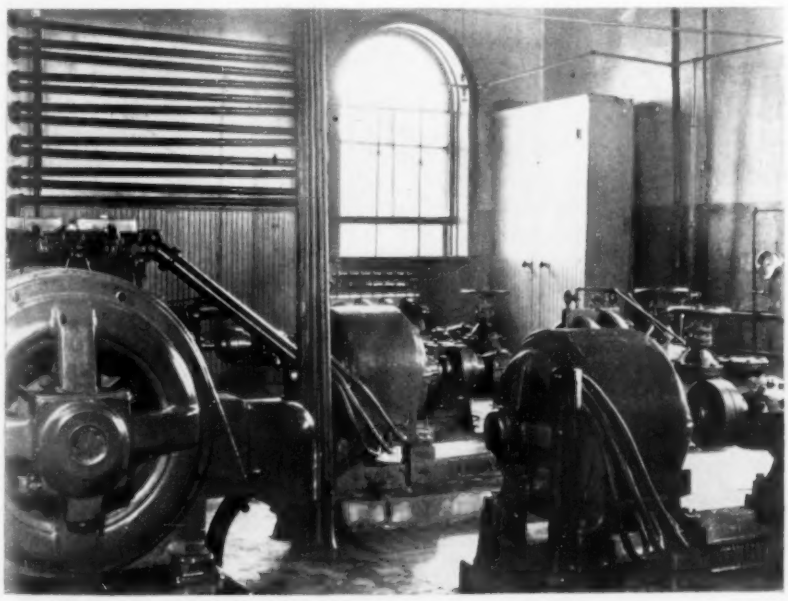
The Hartley Dodge Memorial, Madison's city hall, built by Mr. and Mrs. Marcellus Hartley Dodge in memory of their son

PROBABLY the only example in the country of retaining a private plumbing crew to do regular maintenance and repair for a water system occurs in Madison, N. J. This plan of retaining a "water agent" dates back to 1890, when the community acquired its water-works system and the mayor and council appointed a local plumber to perform the necessary work to the distribution system. His work includes making all repairs to leaks, installing services, and installing water meters.

The "agent" does not have any authority over construction of extensions and improvements. The Water Department takes care of these directly. It has financed them for many years out of the profits from the sale of water. The Department does this without resorting to the sales of bonds. The water works has never had any bonds issued against it other than the original issue of $80,000.

Meter-Ownership Change Saves Water

In 1923 the Department assumed ownership of the water meters, and made a distinct savings in water used. Before these, the customers were required to furnish their own meters. This proved unsatisfactory and resulted in the Department's being able to account for only about 55% of the water used. Since then, with the meters more directly under the control of the De-



These pumps from the operating heart of Madison's water supply.

Superintendent Frank Waters.

ANOTHER

Westinghouse

CONTRIBUTION

to Finer, Cleaner Cities

The Successor to the Garbage Can

THE NEW

Westinghouse WASTE-AWAY

DISPOSES OF GARBAGE ELECTRICALLY

Garbage collection and disposal are headaches that plague every municipality. That's why progressive cities will want homeowners to install the Westinghouse Waste-Away, Electric Garbage Disposer. Every one put to use means less garbage to collect—frees man power for other jobs.

This new home appliance grinds food waste into tiny particles and flushes it down the drain. It eliminates a sanitation problem—the garbage can—the gathering place for flies and vermin, the breeding place for disease. Yes, the Waste-Away is the modern, sanitary method of garbage disposal. More and more homeowners are wanting one . . . a trend you'll want to encourage.

Westinghouse
ELECTRIC CORPORATION

Plants in 25 Cities . . . Offices Everywhere

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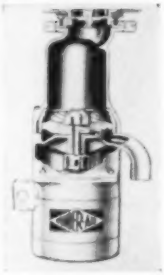
WONDER-AID
GARBAGE DISPOSER

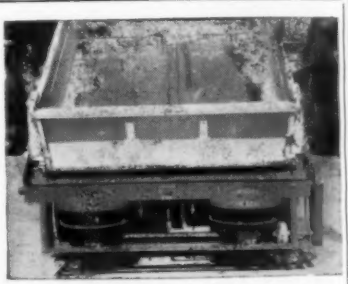


BY COMPARISON
POINT-BY-POINT
PART-BY-PART
WONDER-AID IS
SUPERIOR
IN EVERY WAY

Consider These Exclusive Wonder-Aid Features

Only WONDER-AID Garbage Disposer has an independent motor suspension, allowing 30-second removal without disassembly of unit or interruption of normal sink service. Super-power 1/3 hp. motor with high starting torque, operates on 115-230-V.A.C. self-lubricated bearings. Rubber-cushioned transmission for quiet, vibrationless, operation. Dead-air chamber between cutting and motor compartments for additional sealed protection. WONDER-AID gives rapid, complete, reduction and elimination of all kitchen wastes. Is self-cleaning. Quickly and easily installed. Has one-year service warrantee. Adaptable to nearly all sinks. Offset body for tight installation.

Manufactured by
Wonder-Aid Products, Inc.
BURBANK, CALIFORNIA
CHarleston 8-4437



Hydraulic Spreader Gives

- √ **Controlled Speed**
- √ **Controlled Density**
- √ **Controlled Direction**

City, county and state highway departments use Hydro Spreaders because they provide the safe, sure way of spreading icy streets and roads. Easily installed on any dump truck with hydraulic hoist.

Material can be spread from 9 ft. to 35 ft. at speeds up to 30 m.p.h. All sprockets and chains are fully enclosed and material can be dumped over spreader without damage. One man can drive truck and operate spreader from cab.

An exclusive Hydro Spreader feature is the automatic gate opening device. When the driver starts the spreader the gates open and as the spreader is stopped the gates automatically close. **Immediate delivery.**

Write Paul M. Cole Co., Nat'l Distrs., 30 No. LaSalle St., Chicago, Ill.

Dealer Territory Available

Hydro Spreader Corp.
247 Madison St. Waukesha, Wisc.

partment, about 90% of the water is accounted for through 2,300 metered services.

The water system consists of a set of wells. Two are equipped with one Delaval pump having a capacity of 1,500 gpm and two Twinvoluate 700-gpm pumps. All work against a 331-foot head. The pumps deliver water to two standpipes. One, with a capacity of 275,000 gallons, was erected in 1890. The other, erected in 1929, holds 525,000 gallons.

Madison's water department has been managed since 1916 by Frank Waters, first as Chairman of the Water and Light Committee in the Borough Government, and then as superintendent.

Superintendent Waters, blind since the age of seven, operates both the water and electric services in Madison. The efficiency of his departments and the high types of service that he furnishes at low cost illustrate how he has risen above this handicap. He has developed a remarkable memory, and can recognize a person after hearing his voice only once or twice.

In this wooded grove are located Madison's two standpipes.

Big Business of Local Government to Become Still Bigger

LOCAL governments will need revenues of about 8.4 billions in 1952 if they are to cover their expenditures for that year. This estimate is given in a recent Brookings Institution study, *Governmental Costs and Tax Levels*, by Lewis Kimmel. The figure includes local shares in state-collected taxes, but it does not include receipts from grants. It compares with 5.6 billions for 1940 and 6.3 billions for 1946.

The report emphasizes that the 1952 estimates are not what they *should* be, but what the author thinks governmental costs *will be*, and outlines his reasons. Major consideration was given to public policies—existing and emerging—affecting expenditures and expenditure trends in the estimates. The growth of population, probable trends in production and national income, and possible changes in the price level were also taken into account.

The three general assumptions underlying the estimates are:

1. That the cost of living and general price indexes will be about 50% higher than in 1940, and that the compensation of governmental employees will be increased over 1940 by roughly the same proportion as the increase in the cost of living.

2. That the fiscal year 1952 will be one of general satisfactory economic conditions, with substantially full employment.

3. That there will be no sharp change—as compared with 1940—in the distribution of total activities between the private and public sectors of the economy.

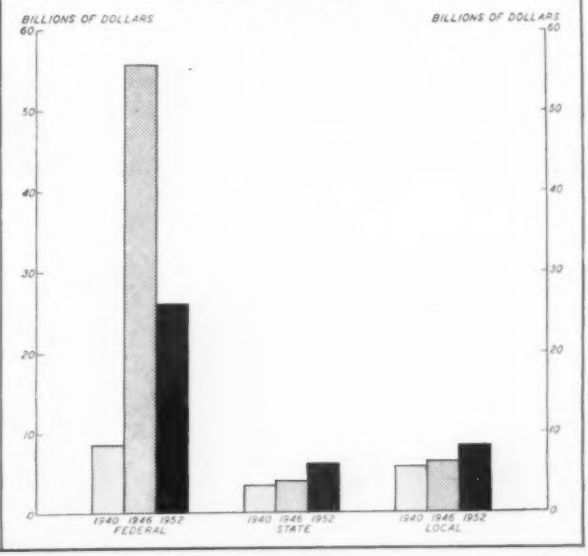
The estimates indicate that in 1952 state and local expenditures financed from their own sources will amount to roughly 14.5 billions, or a little over 60% more than in 1940, and 40% above 1946. In 1952 state and local expenditures will be 55% as large as those of the Federal Government, according to the estimates. Combined cash expenditures of federal, state, and local governments are estimated at 40.5 billions for 1952, almost two and one-half times the expenditures for 1940.

LOCAL TAXES AND OTHER REVENUES, ESTIMATES FOR THE FISCAL YEAR 1952 COMPARED WITH 1940

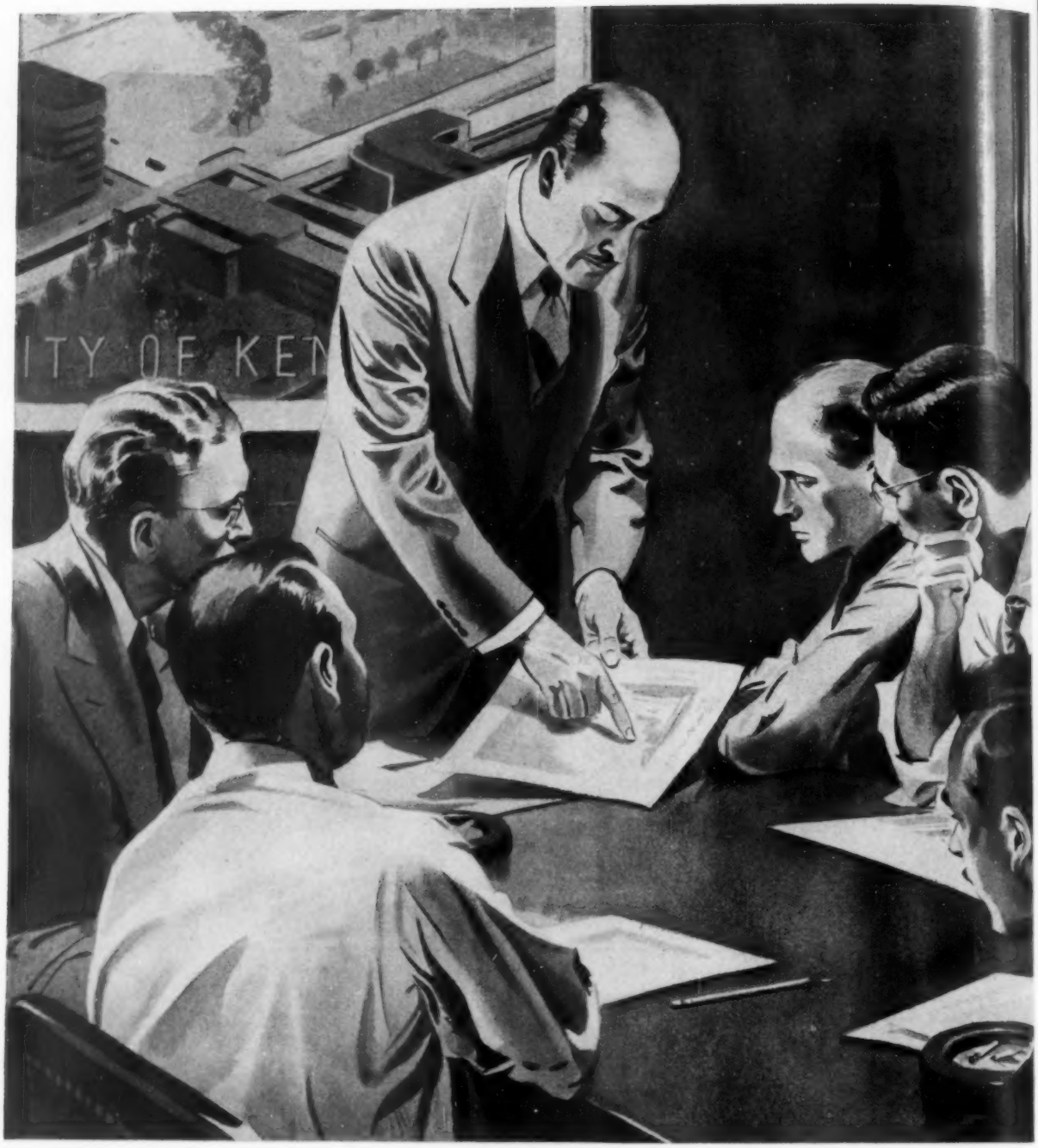
(In millions of dollars)

Source	1940	1952
Taxes:		
Property taxes	4,300	6,020
General and retail sales taxes	66	250
Income taxes	20	50
Special sales and excises	24	75
Taxes on specific businesses	179	400
Motor vehicle licenses	24	35
Other nonbusiness licenses	50	75
Miscellaneous	15	40
Total locally collected taxes	4,678	6,945
Shares in state-collected taxes	271	450
Total taxes	4,949	7,395
Nontax revenues:		
Special assessments	102	150
Charges for services	330	660
Interest and rents	107	150
Other nontax revenues	51	80
Total nontax revenues	590	1,040
Total tax and nontax revenues	5,539	8,435

ESTIMATED FEDERAL, STATE, AND LOCAL CASH EXPENDITURES FOR THE FISCAL YEAR 1952 COMPARED WITH 1940 AND 1946



FROM "GOVERNMENTAL COSTS AND TAX LEVELS," PUBLISHED BY THE BROOKINGS INSTITUTION, WASHINGTON 6, D. C.



"Gentlemen, you still have a right to be from Missouri!"

SANITATION is your business, gentlemen. The cleanliness and health of the community is your department.

That's why—when we first introduced the Disposall* method of garbage elimination—you had a right to be "from Missouri," to say "Show me!"

You agreed in principle that here was a great, new step forward—leading to the end of the health menace that is garbage. But you wanted evidence that the General Electric Disposall was practical—that there would be no danger of sewage stoppages, etc.

That we have presented such evidence is shown by the

Ground Garbage

Letters to the editor regarding the article that appeared in the February issue, pages 85-87

Dear Sir:

I am much interested in the article on ground garbage which appeared in the February 1948 issue of THE AMERICAN CITY.

I would like to get about 20 copies of the article in leaflet form if it is available, and would be glad to pay a reasonable price for these copies.

Disposal of garbage wastes from hotels and restaurants constitutes one of the chief difficulties in our own garbage disposal system. I wonder what Mr. Foster's opinion would be on an ordinance compelling these particular businesses to install electric garbage grinders which would dispose of their wastes through sewers.

J. S. MARQUIS, *City Commissioner*
Moose Jaw, Saskatchewan, Canada

If Moose Jaw takes this action, it will be the first example we know of, where a city made the use of grinders mandatory for hotels and restaurants. It sounds like a thoughtful, progressive step.

Gentlemen:

Can you furnish reprints of pages 85-87 of your February issue, covering the subject of "Ground Garbage"? I would like to present one to each of our councilmen before our next meeting, at which time we want to consider the advisability of passing an ordinance on this subject.

I think the article mentioned is instructive and timely. If you can furnish 15 reprints, please advise the cost and how soon you can deliver.

JOHN H. FREED, *Councilman*
Royersford, Pa.

Sent as promptly as possible, with our compliments.

Dear Sir:

Anent your informative questions and answers on ground garbage in the February issue, you may be interested in my correspondence with St. Louis regarding transmission of garbage in sewers, showing that St. Louis is using not two grinders, but only one, and that one part-time. It also shows that shoaling of garbage in the sewers is no problem.

Would you, as Engineering Editor, conclude from the experience at St. Louis and Baltimore that there is little or no merit in a garbage-disposal project involving a *municipal grinder* and transmission of the ground garbage in trunk sewers?

CLINTON L. BOGERT
Bogert-Childs Engineering Associates,
New York, N. Y.

We would not care to make such a generalization. We would hazard the opinion, however, that in communities that have for many years collected mixed refuse, the city would find it difficult to educate the public to the practice of separating the garbage and the refuse.

Incidentally, St. Louis has two station grinders, but uses only one.

Dear Sir:

I would appreciate it if you could send me about 150 copies of the reprints of your February article on ground garbage. These will be used by the members of the Washington Sanitation Conference and by the Interstate Commission on the Potomac River Basin.

You would be pleased to hear all the favorable comments on the article. You really deserve to be congratulated on it.

EMIL A. PRESS
Department of Sanitary Engineering
Government of the District of Columbia

Dear Sir:

I had the pleasure of hearing your Engineering Editor talk to the Washington Conference of Sanitary Engineers in January, and note that you have published an article on "Ground Garbage" in the February issue of THE AMERICAN CITY. If you could spare me three reprints to send to South Africa, I would be very grateful.

E. P. PHILLIPS
Head, Scientific Liaison Office
Union of South Africa

Dear Sir:

In your February issue there appears a paper by your Engineering Editor entitled "Ground Garbage," which consists of a number of questions and answers.

I would like very much to obtain about a dozen copies of this article if they are available, and would thank you to forward them with a statement of cost so that I may forward you my check.

H. E. BUSH, *City Engineer*
Plainfield, N. J.

Manufacturers of Kitchen Garbage Grinders

Thomas W. Berger, Inc.
Sani-Way Division
6 E. 4th St.
Cincinnati 2, Ohio

Drain-O-Matic Co.
1673 E. 82nd Place
Los Angeles, Calif.

Eureka-Williams Corp.
Bloomington, Ill.

General Electric Co.
Department AC-486
Bridgeport, Conn.

Given Mfg. Co.
3855 Santa Fe Ave.
Los Angeles 11, Calif.

Hotpoint, Inc.
5600 W. Taylor St.
Chicago 54, Ill.

In-Sink-Erator Mfg. Co.
1226 Clark St.
Racine, Wis.

Kaiser Fleetwings Sales Corp.
1924 Broadway
Oakland 12, Calif.

Lockley Machine Co.
310-312 Grove St.
New Castle, Pa.

Mullins Mfg. Corp.
Youngstown Kitchen Div.
Warren, Ohio

National Rubber Machinery Company
917 Schweitzer St.
Akron, Ohio

Westinghouse Electric Corp.
Appliance Division
Mansfield, Ohio

Wonder-Aid Products, Inc.
Burbank, Calif.

What Garbage Grinding Costs the Individual Householder

IT WILL cost the average family $6.00 per year to dispose of garbage by the use of a kitchen grinder. This estimate was made by Ralph Fuhrman, Superintendent, District of Columbia Sewage Treatment Plant, Washington, D. C. Mr. Fuhrman made his estimate at the annual meeting of the Maryland-Delaware Water and Sewerage Association meeting held recently in Baltimore, Md.

Mr. Fuhrman based his costs on capitalization of the cost of the grinder over a 20-year period, and adding to that the annual cost of water and additional sewage treatment. On the credit side he deducted the annual cost of a garbage can that would no longer have

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Los Angeles 11, Calif.

to be purchased. His figures were as follows:

Grinder cost per year	$7.50
Water and electricity	1.00
Sewage treatment	0.50
	$9.00
Less can cost	−3.00
Net cost per year	$6.00

"Think of that," says Mr. Fuhrman, "when your wife scoops the garbage out of the sink, wraps it, and carries it out to the garbage can in the back yard. You are asking her to do that work for 50 cents a month."

Figures that Mr. Fuhrman had gathered indicated that before the war there were 175,000 garbage grinders operating in kitchen sinks. At present there are roughly 200,000 garbage grinders being manufactured and installed each year. This means that approximately 800,000 additional people dispose of their garbage annually by this method. The cost of the grinders varies from $75 to $135 and the installation cost varies from $20 to $150 in old homes, depending on the type of plumbing, and about $10 for new homes.

New Officers of National Highway Users Conference

ELECTION of Albert Bradley, executive vice-president of General Motors, and of Albert S. Goss, master of the National Grange, as chairman and vice-chairman respectively of the National Highway Users Conference was announced at the Highway Transportation Congress in Washington last month. Mr. Bradley succeeds Alfred P. Sloan, Jr., who was chosen by acclamation to be chairman emeritus of the Conference.

The Highway Congress drew an attendance of almost 500 leaders from more than 40 states. Resolutions adopted urged Congress to exclude toll roads by law from the Federal Aid highway system, and to amend the law so as to exclude federal aid to those states which divert highway funds to non-highway purposes.

The Highway Congress also called for long-range highway planning committees under legislative auspices in all the states. Its safety committee called for support by the Conferences' affiliates of the objectives of the 1946 President's Safety Conference. This Conference had called for uniform traffic laws and ordinances, improved law enforcement and highway engineering, and public informational campaigns.

Yoakum's Fire Station Recognizes Volunteer Needs

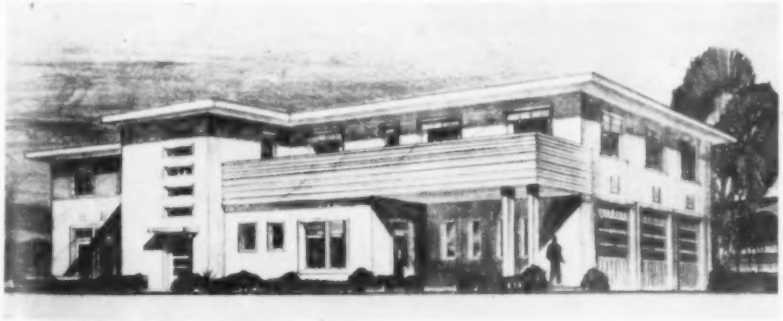
PLANS for a fire station in Yoakum, a municipality in Southeast Texas with a population of 5,000, solve problems typically found in localities using volunteer firemen. The city has a paid chief and two paid drivers, all full-time employees. But, with that exception, all work of the department is carried on by the volunteers.

To make it possible for the three full-time men to be available for 24-hour duty, the city must furnish apartment accommodation to each. All three employees are married and have children. Their apartments will be on the second floor of the building.

But, in order to hold the interest of the volunteers, some social inducements must also be provided. In the project, the recreation room was conceived as the headquarters and the social center for the volunteer firemen and their families. Because present high costs of construction made it necessary to economize, the room's size was kept small. The room can be expanded, however, by means of the folding doors separating it from the apparatus room. By moving the equipment out of the building into the driveway approach, the volunteers will have the entire first floor for special occasions when the recreation room proper is found too small.

The building's walls are of masonry, with a roof construction of wood joists over light steel supporting girders. The recreation room will be lined with acoustical material. As the weather in the area is mild, heating will be by means of vented gas units rather than a central system.

The construction contract was awarded to the low bidder, and work began on April fifth. The project's cost will be $67,900. As the total area of the ground floor and second story is 5,807 square feet, the approximate square footage cost is $11.70. The city has the necessary funds on hand to carry through the construction. Architects are Giesecke, Kuehne and Brooks, of 121 East Eighth St., Austin, Texas.



Yoakum's proposed fire station.

Map Making Made Easy

THE U. S. Chamber of Commerce reports that small-town officials and local chambers of commerce can make creditable street maps by photographically enlarging to a convenient scale, such as 500 feet to the inch, the map of the town appearing on a standard topographic map of the U. S. Geological Survey. The method is to make a tracing of the enlarged photo, leaving out extraneous details such as topography and adding street and public-building names.

The tracing should then be checked on the ground to add roads and houses constructed since the map was drawn. A map user will forgive almost any error in the map except the omission of his own house.

Aerial photos made by the various governmental agencies such as AAA can also be used.

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As an alternate economy, designers often take advantage of Transite's high flow capacity by specifying smaller diameter pipe.

Transite Offers Other Economies, Too. Right from the start, this pipe helps you cut sewage disposal costs. Transite's long 13-foot lengths and light weight mean lower handling costs. And fewer joints to assemble in the finished line result in faster, more economical installation.

Transite Reduces Treatment Costs. As a further economy, tight sleeve-type joints guard effectively against infiltration . . . reduce the load on the treatment plant. Thus, treatment costs are kept low . . . and plant capacity can be conserved for the increased loads incident to future community growth.

Transite Cuts Maintenance Costs. Made of asbestos and cement combined into a homogeneous material of great stability, Transite Sewer Pipe is corrosion-resistant both inside and outside. Tight joints safeguard against root trouble. And every Transite length is factory-tested for strength and uniformity. This adds up to low annual maintenance costs through the years.

Get All The Facts About Transite. If you are seeking ways to lower sewage disposal costs, you'll be interested in the many economies Transite Sewer Pipe can offer you. Send for free brochure containing further engineering data. Address Johns-Manville, Box 290, New York 16, N. Y.

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Extracting Land-Use Data From Punched Cards

By NORMAN J. GORDON
Senior Planner, City Plan Commission
Providence, R. I.

IN PROVIDENCE, R. I., punched cards form the basis of our land survey and analysis. We were fortunate in having International Business Machines equipment already in use in the Assessor's Department and also in having the cooperation of a very helpful I. B. M. branch office.

Briefly, the system is to enter land-use data on punched cards, one card for each lot. The cards are then sorted according to various land-use characteristics. Tabulations are obtained of secondary characteristics within primary characteristics' sortings. For example, the cards can be sorted for land use and for lot size. The result would be a report on the various lot sizes occurring in each land use, information of great value in a zoning study. The cards also can be sorted for present zoning and land use, giving a report which indicates the land use in every zoning district. These examples could be multiplied. They illustrate a process with two sortings. Actually, in practice, sorts for three-, four-, and five-lot characteristics were made, giving highly specialized information in a form exactly as desired for particular studies. The advantages of being able to do this quickly and economically are obvious.

Basic Card Data Set Up in Four Steps

To begin with, we already had the punched cards in the Assessor's Department in which were a few of the lot characteristics needed by the City Plan Commission. The first step was to have selected data from these cards mechanically reproduced into cards designed for the land-use analysis. Plot number, lot number, valuation of land, and total valuation were taken from the Assessor's cards and punched on the Commission's cards by the electric punching machine. In addition there was punched, at the extreme left of the card, community, lot-area-class, and new zoning. The partially punched cards were mechanically sorted into lot-number sequence within each assessor's plat. Then clerks, using information which had been entered on land-use maps already completed in the office of the City Plan Commission, transcribed manually onto the punched cards the following information: land-use code, zoning code (for the existing zoning ordinance), area of parcel, number of dwelling units for each parcel, census tract number, and block number.

The punched cards were then sent to the I. B. M. Service Bureau, where the written information was key-punched into the card and verified. The fourth step was to print reports in various forms and with various information presenting different combinations of tabulations made from the 54,000 punched cards.

The following reports which were prepared would not have been feasible under the old system of indexing:

1. *A Block Summary Report* summarizing data for each combination of land use and zoning. As this report was tabulated, block summary cards were automatically punched to the number of 18,000.

2. *A Tract, Zoning, and Land-Use Report.* From the 18,000 block summary cards, after sorting into land use and zoning sequences, a tabulation of zoning within land use within census tract was prepared. Census-tract summary cards were automatically punched during this tabulation to the number of 4,000 census-tract summary cards.

3. *A Tract, Land-Use, Zoning Report,* prepared from the 4,000 tract summary cards which gave by tracts a summary of the land use within zoning districts.

4. *A City Report of Land Use and Zoning,* prepared from the tract summary cards which showed for the city the zoning breakdown for each land-use category, and then in reverse the land use within each zoning category.

5. *A Lot-Area-Class Frequency Distribution Report,* tabulated by census tracts summarizing the lot-area-class by major land-use categories. In order to prepare this report it was necessary first to sort the 54,000 block summary cards by area and to punch lot-area-class automatically into the cards.

Other reports summarized, for each zoning category in the city, lot-area-class, detailed land-use categories and proposed zoning categories in the city, and lot-area-classes for vacant land.

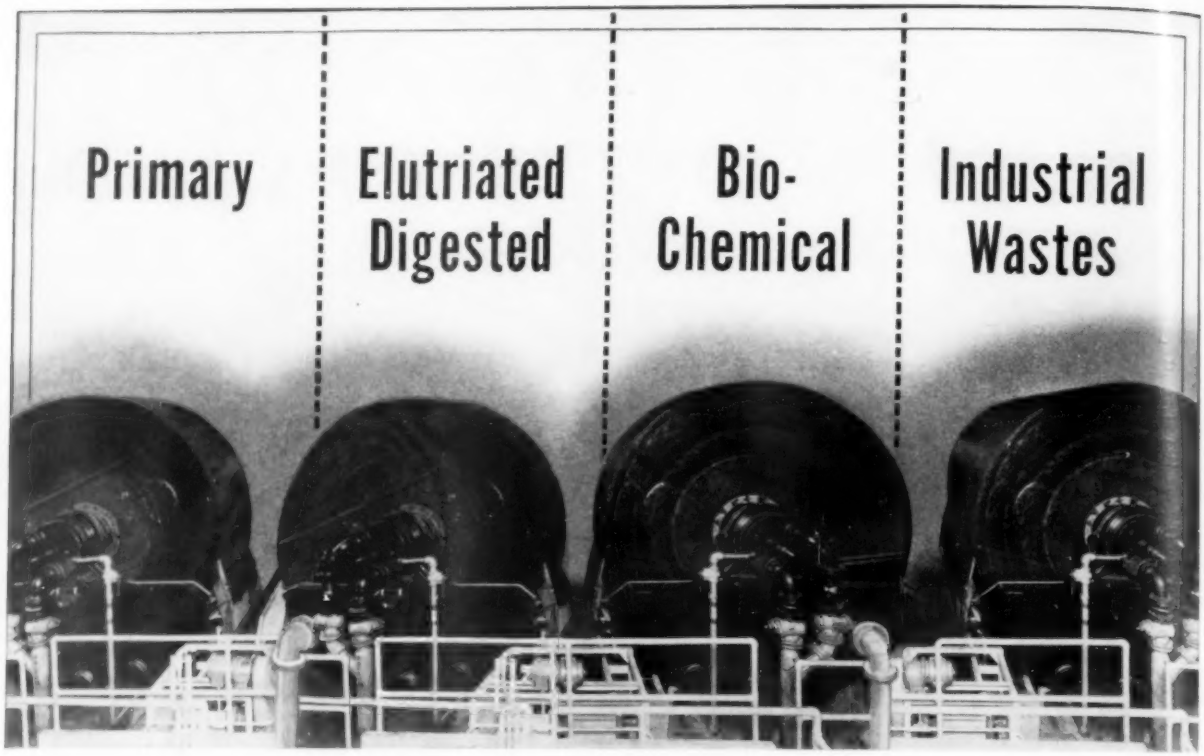
The foregoing is an outline of reports which have already been finished and from which it was possible to draw up statistical summaries for the city in a very short time and at comparatively little cost. One can get an idea of the speed and economy of the procedure from a few examples: Determining the assessed value of property involved in taking land for a highway was accomplished in 1½ hours. A statistical measure of the area of land which would be non-conforming and conforming under the proposed zoning revision was easily arrived at. It has been possible to analyze potential population allowed under the present zoning ordinance and the proposed zoning ordinance and to compare these with the probable population of the city determined by the Commission's population study. Such feats have not only written off the cost of the installation, but made it possible to obtain summaries which by manual methods would require months or years of calculation.

Other Cities Please Copy

What works so well in Providence will work in other cities. Only a few cities in the country now use punched cards in city planning. Our own experience suggests that other cities should give immediate consideration to the employment of this method. The benefits that have accrued to Providence through its use can similarly be enjoyed by other cities. Conditions in each city will dictate the form of the punched card. A working understanding of the system and the uses of each machine will suggest to the local planning commission specific applications of the system to their particular problems. In Providence the work is done on a contract basis with the I. B. M. Service Bureau, which is set up to do individual jobs for organizations not having sufficient volume to justify full-time rental of the machines. In conclusion, the punched-card system of statistical analysis offers to planning organizations the opportunity to get away from "guesstimation" and come closer to unchallenged conclusions.

Fairbanks Municipal Telephone System

FAIRBANKS, Alaska, is building one of the few municipally owned telephone systems in America, the Municipal Finance Officers Association reports. The system is being financed by a $4,000,000 bond issue which voters approved last year. The bond proceeds also are being used to cover costs of new municipally owned light, power, and steam facilities.



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PROCESS EQUIPMENT DIVISION GENERAL AMERICAN TRADE MARK

New Orange Bowl

(Continued from page 113)

nation substantially. Nevertheless, there still is enough light so that the play can proceed easily.

The banks of Westinghouse lights are provided with 10% over-voltage, which means a 35% increase in lighting power on the playing field. Light bulbs burn out more quickly, however, their life being about two years.

The stadium is built to withstand a hurricane blow of 150 miles per hour. To prevent the possibility of the entire stand's tipping over, Engineer Darlow placed a 5-foot-square concrete "dead man" around the entire toe of the stand. This is framed rigidly into the stand so that it will resist this overturning force if it should occur.

The contractor required just 70 days to transform the little Orange Bowl into a large, comfortable stadium, by following plans drawn in Miami's Department of Engineering. This achievement stands out sharply during a period when it is widely thought that shortages in material and labor will prevent projects from being completed in time to be of service to those needing them.

This stadium plays a continuing part in the recreational life of Miami. Although known primarily as the site of the famous Orange Bowl football game, it is also the site of at least 70 other important athletic contests. From a local standpoint, the annual football contest between the two big Miami high schools is sure to fill every seat in the stadium, and Miami University plays all of its home football games on this field. During the winter top-flight polo is played. Once a year sees a rodeo here, and there are patriotic and civic pageants and musical extravaganzas held throughout the year.

The Municipal Bond Market

By FREDERICK L. BIRD
Director of Municipal Research
Dun & Bradstreet, Inc.

Interest rate declines moderately though the borrowing volume remains large

MUNICIPALITIES with capital financing plans have had some reassurances from the recent action of the market for tax-exempt securities. Municipal bond yields, after moving irregularly upward at an accelerating rate for two years, not only halted their rise in February of this year but have since declined moderately in the face of the largest concentration of new bond offerings in the history of municipal borrowing.

Throughout the period of the war and for several months after the close of hostilities, the interest rates at which states and municipalities could sell their bonds continued to fall, reaching a low point early in 1946 when *The Bond Buyer's* compilation of average yield for 20 representative 20-year bonds was 1.29%, not much more than half the yield on obligations of the United States Government.

This unique situation was produced mainly by the combination of a limited supply of securities, due to the wartime halt in state and municipal financing of capital improvements and the decline in outstanding debt, and of the increased value of tax exemption to well-to-do investors with the rise in income tax rates. So long as municipal bonds continued to have a scarcity value, it was evident that municipalities could depend on securing abnormally low interest rates, but with the advent of large post-war capital programs and authorizations for huge veterans' bonus issues it became necessary to secure a broader market than that provided by private investors. This meant that bond yields would have to rise sufficiently to attract buyers with less interest in tax exemption.

The Rise of Municipal Bond Interest Rates

Municipal bond interest rates rose slowly at first, but by December 1946 the *Bond Buyer* index had reached 1.90%. Throughout the first ten months of 1947 the market found stability slightly below this level, helped by the entry of commercial banks, which had a limited interest in tax exemptions; but this period was followed by sharp breaks in bond prices that raised the yield index to 2.47% in February 1948 —nearly twice the low point of two years earlier. Accounting for this accentuation of the bear market for municipal bonds were a halt in active buying by commercial banks, the Federal Reserve System's lowering of its support level for government bonds, the sheer volume of state and municipal borrowing, which reached an all-time high of $2,300,000,000 in 1947, and, probably, the outlook for an equally high volume of borrowing in 1948.

The prospect at this point for the offering of $300,000,000 veterans' bonus bonds by New York State on March 2 and of $200,000,000 by Ohio on March 16, along with a steady volume of other state and municipal issues, suggested the possibility that interest rates might have to rise still higher, in order to compete with corporate bonds for the portfolios of insurance companies and savings banks, for which tax exemption is not a consideration. But issues, however, found so ready an acceptance by investors as to strengthen the municipal bond market as a whole, and *The Bond Buyer's* weekly index receded to 2.46% on March 18. This trend has continued, with the index down to 2.33% on May 13, although new borrowing has been heavy, including such large offerings as $45,800,000 by Philadelphia on April 13 and $66,500,000 by Chicago on May 5.

Confidence Stimulated Considerably

The success with which the municipal market has absorbed the unprecedentedly large volume of state and municipal borrowing in the early months of 1948 stimulates a considerable amount of confidence in at least the immediate opportunities for the offering of municipal securities. The Federal Government's firmly declared intention of supporting government bonds at present levels is likewise a stabilizing factor of importance. There is no assurance, however, in view of the probable continuance of large amounts of municipal borrowing as well as of new financing by private corporations, and of national and international economic and political uncertainties, that municipal bond interest rates will not, sooner or later, move higher. There is the likelihood, moreover, that a greater differentiation will develop between high-grade and less assured credit situations which will work to the financial disadvantage of marginal-revenue bond projects and of the less favorably situated and managed municipalities.

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A Small City Studies Needed Improvements and How to Finance Them

By MARIAN C. MANLEY
Business Librarian
Newark Public Library, Newark, N. J.

UNDER the leadership of Mayor Maxwell Lester, Jr., and the Common Council, the City of Summit, N. J., is carrying on an unusual experiment in the development of community study of city financial problems and capital expenditures. Like other communities during the war, Summit had to defer the erection of new buildings, so that 1948 finds the city in great need of additional school space, a new library building, additional recreational facilities, and other city essentials.

With the cooperation of the League of Women Voters and other civic groups such as the Chamber of Commerce, Young Men's Civic Council, Junior Service League, Fortnightly Club, American Association of University Women, and regional civic groups, the Common Council devised a plan for providing the citizens as a whole with an opportunity to familiarize themselves with the various problems. As a basis for this study the different Boards were asked to submit to the Council by December 15, 1947, a statement of any needed expenditures for additional building facilities. For some time the Board of Education had had an extensive study of the needed buildings for a school development plan underway. The Library Board called in an expert consultant in library planing and the Board's recommendations to the Council on December 15 were based on his study. At an earlier date, the Recreation Board had had an expert survey its needs, and recommendations based on this survey were made to the Council.

Open "Town Meeting" Planned

All of the various general studies had been adequately reported over the months in the *Summit Herald*, a weekly newspaper of wide circulation. So that all of these projects might benefit from public consideration, plans were made for an open "Town Meeting." As a basis for discussion the City Council prepared a brochure, "It's Your Money," a statement to the citizens of Summit by the Mayor and Common Council. This was issued in April 1948, and the 16-page pamphlet is available on request.

"It's Your Money" describes with great clarity the financial needs of local government, the sources from which the money is received, how it is raised, and what are the financial requirements in the foreseeable future. Tables cover the projects and the expenditures they entail. Methods by which they were to be financed are discussed and the projects segregated according to those for which bond anticipation notes had been issued, those that are covered by the 1948 budget, projects for which long-term municipal bonds will be issued and projects for which long-term school bonds will be issued. In addition to these, the other projects, such as street-widening proposals, additional recreational facilities, the proposed library building, and sewer and incinerator projects, were listed with the sums involved. A caption, "What Your City Budgets May Look Like," headed a comparative table for 1948, 1949, 1950 and 1951, and this was followed by more explanatory matter. The whole text provided a careful analysis of Summit's financial problems.

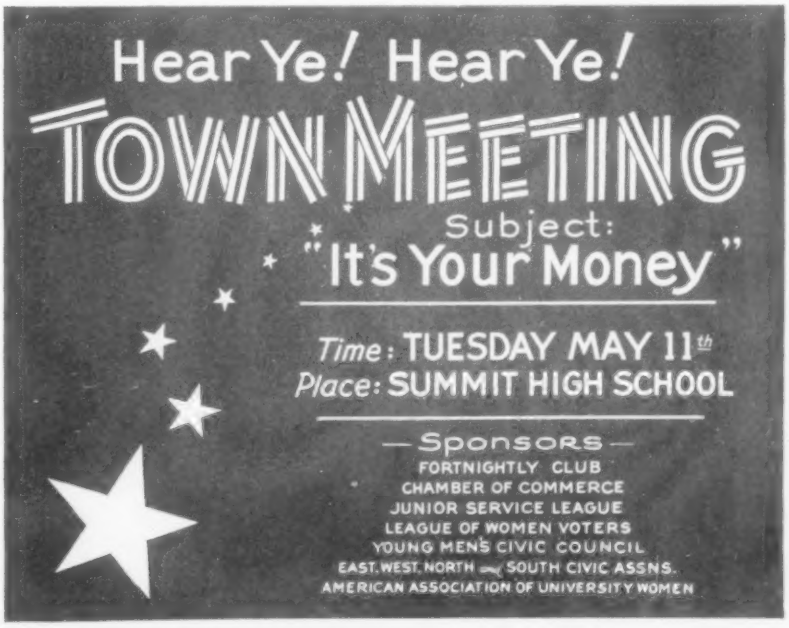
"It's Your Money" Widely Distributed

To build attendance for the Town Meeting, the city mailed "It's Your Money" and an invitation to all of the individual taxpayers. Copies of the brochure were widely distributed by the cooperating associations and through the agency of the *Summit Herald*, the Public Library and the City Hall. The weekly *Summit Herald* as well as the daily *Newark Evening News* carried stories on the proposed meeting. Posters were distributed around the town. The result was that well over 750 people were present in the high-school auditorium the evening of May 11 to hear these matters discussed.

Layton C. Hall, of the Rutgers University School of Business, opened the meeting as chairman with a brief statement of why it was held and then turned it over to Mayor Lester as moderator. The representatives of the various boards then presented seven-minute statements of their needs.

The president of the Board of Education emphasized the Board's desire to make the facilities of the school system available for the community as a whole, and pointed out that there was no investment as important to the development of the city as the school system. The Board of Recreation's plans to provide indoor as well as outdoor recreation space facilities and the Library Board's request for a new $250,000 building were explained and discussed by qualified representatives. A member of the advisory group to the Summit Planning Board summarized a report advocating the appointment of a Summit Housing Authority to make a more thorough study of low-cost housing in the city. Percival M. Bland, President of the Common Council, then briefly summarized the Council's problems in meeting the various requests for funds

(*Continued on page* 181)



Posters 28 by 22 inches in size announced the Summit Town Meeting.

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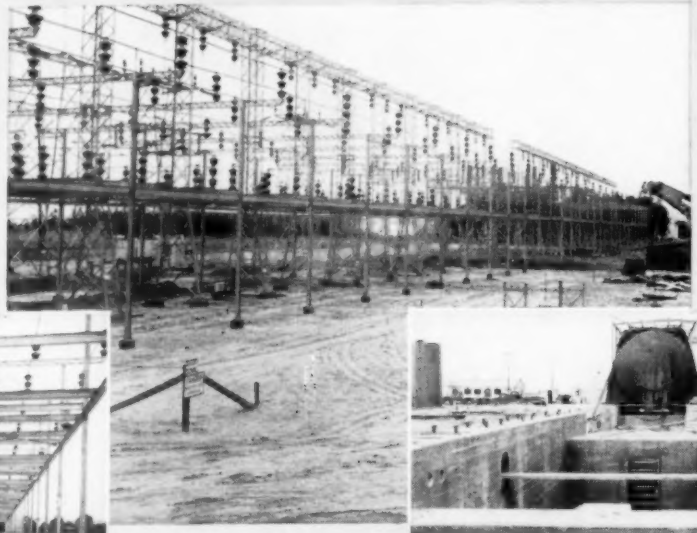

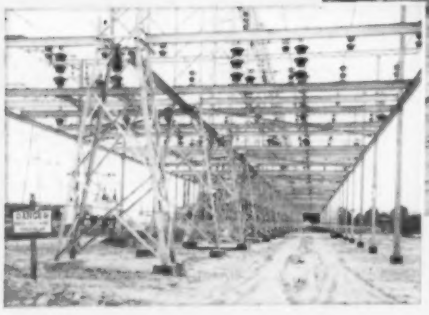

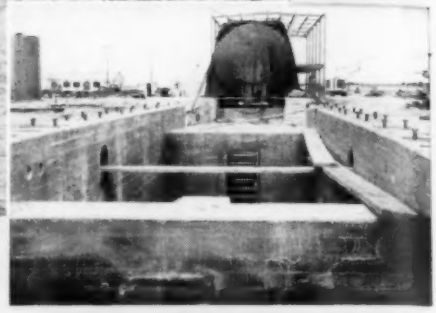

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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, JR.
With the assistance of Frank B. Williams and Edward M. Bassett

Required Distance Between Restaurants Serving Liquor

CONNECTICUT. *Stavola* v. *Bulkeley*, 56 Atlantic (2d) 645 (Connecticut Supreme Court of Errors, December 3, 1947).

Delaney v. *Zoning Board of Appeals of City of Hartford*, 56 Atlantic (2d) 647 (Connecticut Supreme Court of Errors, December 3, 1947).

State ex rel. *Haverback* v. *Thomson*, Atlantic (2d) (Connecticut Supreme Court of Errors).

Limitations on the location and number of retail liquor outlets have been involved in three recent decisions of the highest Connecticut court.

Business zone regulations in Hartford once required a distance of one thousand feet (measured along the central line of the street) between each restaurant selling all types of alcoholic liquor, and the Zoning Board of Appeals was granted power to make variances where there were "practical difficulties or unnecessary hardships" in carrying out the strict letter of the ordinance. In the *Stavola* case, after two applications of prior owners for a variance had been denied, a variance was granted permitting such a restaurant in a business zone, about seven hundred feet from each of two others on the same avenue—on the ground that it would "provide a much-needed restaurant of this kind in the neighborhood." Neighboring landowners appealed, and the lower court's decision affirming the Board was reversed in the Connecticut Supreme Court of Errors.

In the opinion, the Board's failure to make an express finding of practical difficulties or unnecessary hardships was held to be unimportant, if the facts would support such a finding. It was then held that the power to grant variances was limited to occasionally softening the strictness of the ordinance's provisions in applying them, and could not be used to change substantially the comprehensive municipal zoning plan. The proof in the present instance, limited to the desirability of the restaurant and to the financial loss to the applicant from refusal of a permit, was held insufficient to justify a variance on the stated grounds. The *Delaney case* (132 Connecticut 537, 45 Atlantic (2d) 828, discussed in THE AMERICAN CITY for January 1947) was cited for the proposition that the phrase "practical difficulty or unnecessary hardship" should be construed together as a single requirement.

In the *Delaney* case, the amended business zoning regulations required a distance of fifteen hundred feet between restaurants of the same type, and variances could be granted for "difficulty or unreasonable hardship." The Board granted such a variance for a restaurant within fifteen hundred feet of three similar ones. Since the only real evidence involved the owner's financial distress and the hope that a liquor license would turn an operating deficit into a profit, the Court refused to approve the variance. The further suggestion that the location of such a restaurant might reduce the congestion elsewhere was dismissed as too speculative. The Board's action was condemned as "spot zoning," and the Court went so far as to state that only rare situations would permit a variance in the regulation covering spacing of licensed restaurants.

The *Haverback* case involved a different type of regulation. Under a statute adopted several years ago in Connecticut, the Liquor Control Commission was required to refuse permits for locating a retail liquor store "(1) in no-permit towns, and (2) where prohibited by the zoning ordinance of any city or town." In West Hartford various sections of the zoning ordinance permitted retail liquor stores in business and industrial districts, and prescribed the required distance between such stores and any churches and schools; and a further provision limited the number of such retail stores, restaurants, and taverns to one per 1500 of population according to the latest Federal census. In the present case the proprietors of a liquor package store in West Hartford wished to move their establishment around the corner to larger premises, formerly occupied by a wholesale liquor concern and not requiring much alteration for the proposed new use. Both premises were in an industrial zone, but at the time there were already more liquor outlets in the town than were permitted by the limitations in the ordinance. When the Town Clerk refused to certify that the removal was not prohibited by the zoning ordinances, the proprietors brought mandamus to force the issuance of such a certificate. The proprietors argued that the limitation was not a *zoning* regulation, and that a new store was not in violation of the ordinance, while the town, of course, argued that the proposal involved extension of a non-conforming use. The lower court granted the mandamus, and the Connecticut Supreme Court affirmed.

Since the basic Connecticut enabling act for zoning was expressed in terms of limiting uses in different districts, the Court held that a limitation on the total number of liquor outlets could not be accomplished under the zoning power.

> "The legislature . . . has not, however, delegated to municipalities authority to limit, in the guise of a zoning ordinance, the number of liquor outlets in the town as a whole. . . .
>
> "While the provision upon which the defendant seeks to justify his refusal to certify was a part of the zoning ordinance, it was not zoning and was not effective as such to characterize the location as restricted in its use for package stores."

Taxis—Mandatory Off-the-Street Parking

TENNESSEE. *Spoone* v. *Mayor and Aldermen of the Town of Morristown*, 206 South Western (2d) 422 (Tennessee Supreme Court, December 8, 1947).

In addition to the system of licensing taxicabs with appropriate fees, the Town of Morristown enacted an ordinance forbidding taxicabs to park on public streets and requiring them to set up taxi stands off the streets. Momentary stops to discharge passengers, and waiting for passengers while the meter was going, were excepted. Taxi owners sued to enjoin enforcement of the ordinance, and alleged that it was unreasonable and discriminatory, particularly by allowing other vehicles to park on the streets at will.

In its opinion the Tennessee Supreme Court held that it has no jurisdiction to entertain the action, and also upheld the ordinance on its merits as reasonable. In the latter connection, use of the streets by taxicabs was referred to as a privilege. The possibility of pecuniary loss to complainants was held to have no tendency to establish the invalidity of the ordinance.

Used-Car Lots—State and Municipal Control

NEW JERSEY. *Chaiet* v. *City of East Orange*, 56 Atlantic (2d) 599 (New Jersey Supreme Court, January 14, 1948).

Under ordinances in East Orange, any open lot used for the sale or exchange of automobiles in that city must pay a license fee, determined in accordance with the area of the lot; and such a lot must be enclosed with a fireproof fence at least 18 inches high and with openings only at specified places. Twenty-one such lots were being operated within the city in 1946-1947, with sales made mostly during the spring and summer. Several proprietors challenged this ordinance, on the broad ground that the state statutes licensing the same business had preempted the field of regulating such lots.

In the opinion, the state's licensing setup was held to be a method of supervising the transfer of title to automobiles, without any concern for the local police problems. In a strong and rather important dictum, the various dangers arising from a used-car lot —fire and sanitary hazards, the risk to pedestrians and passing cars near the exits, and the general disorder—were held to make such a business "a fit, almost a necessary, subject for the exercise of a degree of municipal control," and the ordinances were therefore upheld. In particular, the requirement of a fence was held to be a reasonable guarantee of protection to passing pedestrians and motorists.

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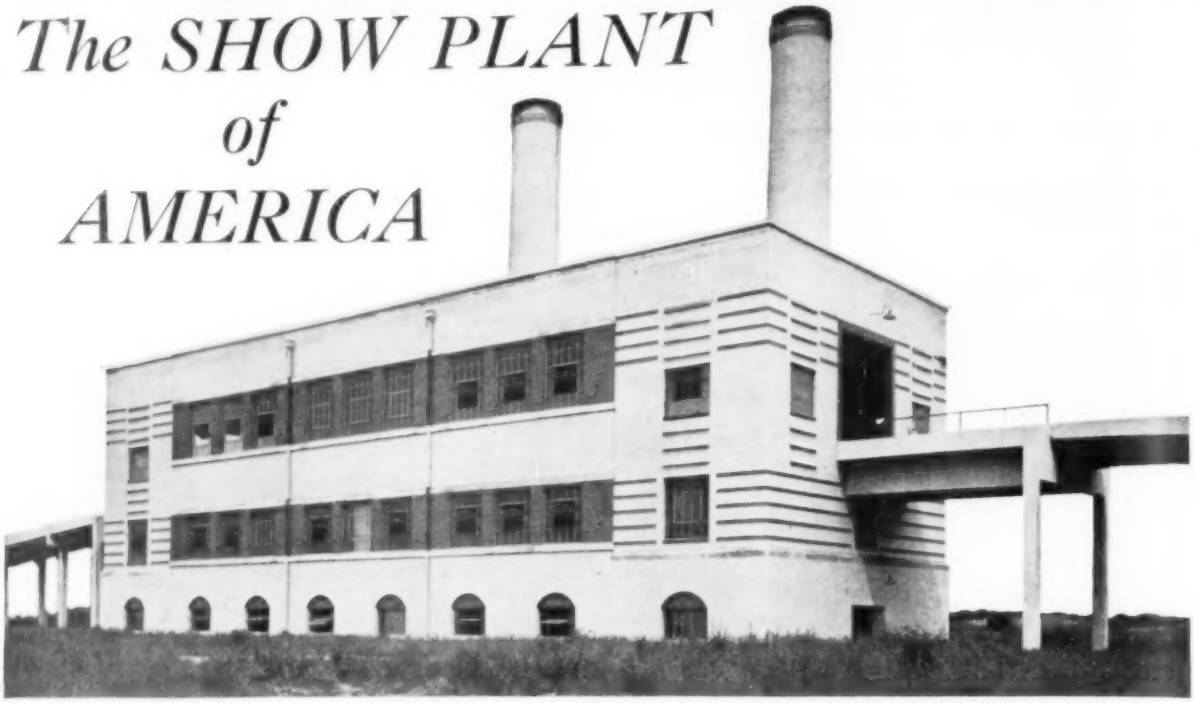

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Oil City, Pa.	.69	100 "
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Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

June 7-10—Denver, Colo.
MUNICIPAL FINANCE OFFICERS ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Meeting (Hotel Cosmopolitan). Exec. Dir., Miner B. Phillipps, 1313 East 60th St., Chicago 37, Ill.

June 10-12—Denver, Colo.
COLORADO MUNICIPAL LEAGUE. Annual Meeting (Hotel Shirley-Savoy). Exec. Sec., Allen E. Pritchard, Jr., 327 Norlin Library, Boulder.

June 13-16—Uniontown, Pa.
PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP COMMISSIONERS. Annual Conference (Hotel Summit). Sec.-Treas., H. A. Fritschman, Upper Darby, Pa.

June 14-16—Faribault, Minn.
LEAGUE OF MINNESOTA MUNICIPALITIES. Annual Meeting. Exec. Sec., C. C. Ludwig, 15 University of Minnesota Library, Minneapolis.

June 15-17—Aberdeen, S. D.
SOUTH DAKOTA MUNICIPAL LEAGUE (Hotel Ward). Treas., J. G. Barger, P. O. Box 984, Aberdeen, S. D.

June 16-18—Long Beach, Calif.
CIVIL SERVICE ASSEMBLY OF THE UNITED STATES AND CANADA—Western Regional Conference. Chairman, F. R. Coop, Personnel Dir., Pasadena 1, Calif.

June 16-18—New York, N. Y.
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting (Hotel Commodore). Exec. Sec., Morgan Strong, 6 Elk St., Albany 7, N. Y.

June 17-19—Jamestown, N. Y.
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting. Exec. Sec., Charles E. Clark, Box 271, Wayne, Pa.

June 18-19—Milwaukee, Wis.
CENTRAL STATES SEWAGE WORKS ASSOCIATION. Annual Meeting (Hotel Schroeder). Sec.-Treas., Paul W. Reed, 1098 W. Michigan St., Indianapolis, Ind.

June 20-26—Zurich, Switzerland
INTERNATIONAL CONGRESS FOR HOUSING AND TOWN PLANNING (Das Kongresshaus). Acting Sec. Gen., Morris H. Hirsh, International Federation for Housing and Town Planning, 13 Suffolk St., Haymarket, London, S.W.1, England.

June 21-25—Salt Lake City, Utah
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Convention (Hotel Utah). Exec. Dir., Edward C. Kemper, 1741 New York Ave., NW, Washington 6, D. C.

June 21-28—Erie, Pa.
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. Annual Meeting (Boat Trip). Sec., H. F. Alderfer, The Capitol, Harrisburg, Pa.

June 23-25—Dayton, Ohio
OHIO CONFERENCE ON SEWAGE TREATMENT. Annual Meeting (Hotel Dayton-Biltmore). Exec. Sec., G. A. Hall, 302 State Dept. Bldg., Columbus, Ohio.

June 28-30—Sault Ste. Marie, Mich.
MICHIGAN ASSOCIATION OF CHIEFS OF POLICE. Annual Meeting (Obijway Hotel). Exec. Sec., E. B. Wilson, Detroit Leland Hotel, Detroit 26.

July 1-3—Atlantic City, N. J.
NATIONAL INSTITUTE OF CITY AND TOWN CLERKS. Annual Conference (Chalfonte-Haddon Hall). Sec., Philip P. Costello, City Hall, Perth Amboy, N. J.

July 11-14—Toronto, Canada
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting (Hotel Royal York). Exec. Sec., Wm. G. Herzel, 1313 E. 60th St., Chicago 37, Ill.

***July 14-16—Baton Rouge, La.**
ANNUAL SHORT COURSE FOR SUPERINTENDENTS AND OPERATORS OF WATER AND SEWAGE WORKS (Geology Building). Dir., J. H. O'Neill, Louisiana State Department of Health, Civil Courts Bldg., P. O. Box 630, New Orleans 7, La.

July 16-24—Chicago, Ill.
AMERICAN ROAD BUILDERS ASSOCIATION. Road Show. Soldier Field. Engr. Dir., Charles M. Upham, 1319 F St., NW., Washington 4, D. C.

July 27-29—White Plains, N. Y.
NEW YORK STATE ASSOCIATION OF CHIEFS OF POLICE (Hotel Roger Smith). Sec., R. W. Morris, 215 State Tower Building, Syracuse.

***Aug. 23-25—Chattanooga, Tenn.**
AMERICAN WATER WORKS ASSOCIATION—Kentucky-Tennessee Section. Annual Convention (Hotel Patton). Sec., R. P. Farrell, 420 Sixth Ave., No., Nashville, Tenn.

Aug. 23-25—State College, Pa.
PENNSYLVANIA WATER WORKS OPERATORS ASSOCIATION. Annual Meeting (Pennsylvania State College). Sec.-Treas., Ivan M. Glace, 1001 N. Front St., Harrisburg, Pa.

Aug. 23-27—Milwaukee, Wis.
NATIONAL SHADE TREE CONFERENCE. Annual Convention (Hotel Schroeder). Sec.-Treas., L. C. Chadwick, Dept. of Horticulture, Ohio State University, Columbus 10, Ohio.

Aug. 25-27—State College, Pa.
PENNSYLVANIA SEWAGE AND INDUSTRIAL WORKS ASSOCIATION. Annual Meeting (Electrical Bldg., Pennsylvania State College). Sec.-Treas., Bernard S. Bush, Kirby Health Center, Wilkes-Barre, Pa.

Aug. 25-28—Logan, Utah
UTAH MUNICIPAL LEAGUE. Annual Meeting (Hotel Eccles). Sec.-Treas., Lyla Ray, Newhouse Hotel, Salt Lake City 1, Utah.

Sept. 1-2—Winnipeg, Manitoba
AMERICAN WATER WORKS ASSOCIATION — Minnesota Section. Annual Conference (Hotel Royal Alexandra). Sec.-Treas., R. M. Finch, 416 Flour Exchange, Minneapolis 15, Minn.

Sept. 8-11—Chicago, Ill.
GOVERNMENT RESEARCH ASSOCIATION. Annual Convention (Hotel Congress). Sec., G. G. Tegnell, 30 Rockefeller Plaza, New York 20, N. Y.

Sept. 9-11—Saranac, N. Y.
COUNTY OFFICERS' ASSOCIATION, State of New York. Annual Meeting (Saranac Inn). Exec. Sec., Donald C. Scribner, County Bldg., Johnstown, N. Y.

Sept. 10-11—Grand Forks, N. D.
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Convention. Exec. Sec., Myron H. Atkinson, P. O. Box 358, Bismarck, N. D.

***Sept. 12-16—Mackinac Island, Mich.**
INTERNATIONAL CITY MANAGERS ASSOCIATION. Annual Convention (Hotel Grand). Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago.

Sept. 14-15—Des Moines, Iowa
IOWA SEWAGE WORKS ASSOCIATION. Annual Convention (Hotel Kirkwood). Sec.-Treas., Leo Holtkamp, P. O. Box 310, Webster City, Iowa.

Sept. 15-17—Pittsburgh, Pa.
PENNSYLVANIA STATE ASSOCIATION OF COUNTY COMMISSIONERS. Annual Convention (Hotel William Penn). Sec.-Treas., Herbert S. Bolger, Court House, Hollidaysburg, Pa.

Sept. 16-17—Cheyenne, Wyo.
AMERICAN WATER WORKS ASSOCIATION—Rocky Mountain Section. Annual Convention (Hotel Plains). Sec.-Treas., O. J. Ripple, 710 Colorado Bldg., Denver 2, Colo.

Sept. 20-24—Boston, Mass.
ILLUMINATING ENGINEERING SOCIETY. Annual Convention (Hotel Statler). Sec., A. D. Hinckley, IES National Technical Conference, 51 Madison Ave., New York 10, N. Y.

Sept. 21-24—New York, N. Y.
NEW ENGLAND WATER WORKS ASSOCIATION (Hotel Pennsylvania)). Sec., Joseph C. Knox, 609 Statler Bldg., Boston, Mass.

***Sept. 22-24—Flint, Mich.**
AMERICAN WATER WORKS ASSOCIATION—Michigan Section. Annual Convention (Hotel Durant). Sec.-Treas., Raymond J. Faust, Chief, Division of Water Supply, Department of Health, Lansing 4.

Sept. 22-24—Reading, Pa.
LEAGUE OF CITIES OF THE THIRD CLASS IN PENNSYLVANIA. Annual Convention (Hotel Abraham Lincoln), Pres., Walter E. Greenwood, Room 302, City Hall, Harrisburg, Pa.

Sept. 26-28—Old Point Comfort, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Convention (Hotel Chamberlin). Exec. Sec., H. J. Baumes, 902 Travelers Bldg., Richmond.

Sept. 26-30—Atlantic City, N. J.
AMERICAN TRANSIT ASSOCIATION. Annual Convention (Hotel Traymore). Gen. Sec., A. W. Baker, 292 Madison Ave., New York 17, N. Y.

Sept. 26-Oct. 1—Omaha, Nebr.
NATIONAL RECREATION CONGRESS. Annual Convention (Hotel Fontenelle). Sec., T. E. Rivers, National Recreation Association, 315 Fourth Ave., New York, N. Y.

Sept. 27-30—Milwaukee, Wis.
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. Annual Convention (Hotel Schroeder). Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

***Sept. 29-30—Clarksburg, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—West Virginia Section. Annual Convention (Hotel Stonewall Jackson). Sec., John B. Harrington, State Department of Health, Charleston 5, W. Va.

Sept. 30-Oct. 1—Sioux Falls, S. D.
SOUTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Convention (Hotel Carpenter. Sec., W. W. Towne, Dir., Division of Sanitary Engineering, State Board of Health, Pierre, S. D.

Oct. 3-6—Boston, Mass.
AMERICAN INSTITUTE OF PARK EXECUTIVES, Fiftieth Anniversary. Annual Convention. Exec. Sec., David Hovey, Box 422, Rockford, Ill.

Oct. 4-7—Buffalo, N. Y.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual Meeting (Hotel Statler). Sec., Irvin Shulsinger, International Municipal Signal Association, Inc., 11 W. 42d St., New York 18.

Oct. 4-7—Ottawa, Canada
CIVIL SERVICE ASSEMBLY. Annual Conference on Public Personnel Administration. (Hotel Chateau Laurier, Hotel Lord Elgin). Dir., James M. Mitchell, 1313 E. 60th St., Chicago, Ill.

***Oct. 5-6—Fort Dodge, Iowa**
AMERICAN WATER WORKS ASSOCIATION—Iowa Section. Annual Convention (Hotel Wahkonsa). Exec. Sec., H. V. Pedersen, Supt. and Mgr., City Water Works, Marshalltown, Iowa.

***Oct. 6-9—St. Louis, Mo.**
ASSOCIATION OF SCHOOL BUSINESS OFFICIALS. Annual Convention (Hotel Jefferson). Sec.-Treas., H. W. Anderson, 306 E. Lovell St., Kalamazoo, Mich.

***Oct. 7-8—Mansfield, Ohio**
AMERICAN WATER WORKS ASSOCIATION—Ohio Section. Annual Convention (Hotel Mansfield-Leland). Sec.-Treas., F. P. Fischer, Sales Engineer, Wallace & Tiernan, Cleveland, Ohio.

(*Continued on Page 161*)

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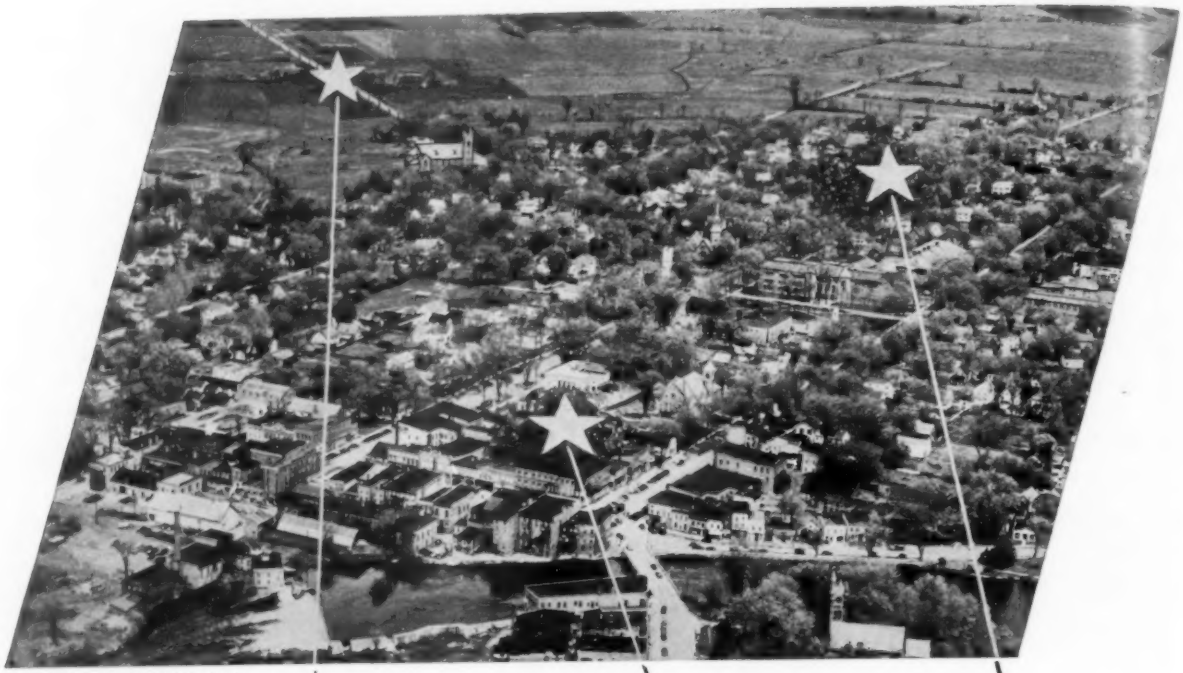

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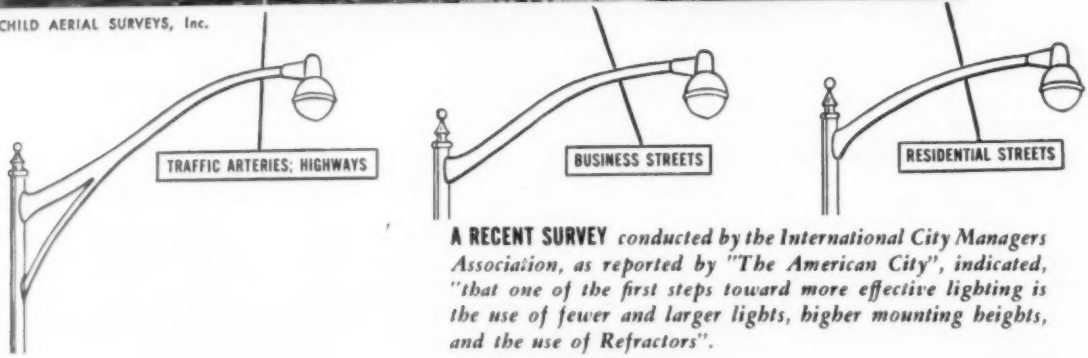

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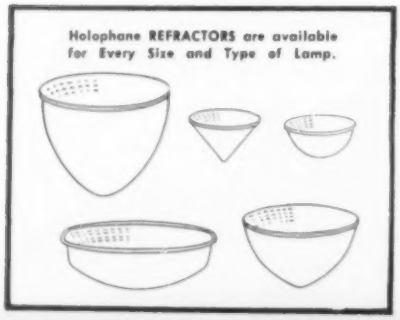

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Conventions

(*Continued from Page 159*)

Oct. 10-13—Galveston, Texas
AMERICAN WATER WORKS ASSOCIATION—Southwest Section. Annual Convention (Hotel Buccaneer). Sec.-Treas., L. A. Jackson, Mgr. Little Rock Water Works, Little Rock, Ark.

***Oct. 10-13—Philadelphia, Pa.**
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. Annual Convention (Hotel Benjamin Franklin). Exec. Sec., Miss Elizabeth Glenn, 1615 H St., NW., Washington 6, D. C.

Oct. 10-14—New York, N. Y.
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference (Hotel Pennsylvania). Exec. Sec., Edward J. Kelly, 918 F St., NW., Washington, D. C.

Oct. 11-13—Springfield, Ill.
ILLINOIS MUNICIPAL LEAGUE. Annual Convention (Hotel Leland). Exec. Dir., A. L. Sargent, Illinois Municipal League, 537 South Fourth St., Springfield, Ill.

Oct. 11-13—New York, N. Y.
AMERICAN SOCIETY OF PLANNING OFFICIALS. Annual Meeting (Hotel New Yorker). Exec. Dir., Walter H. Blucher, 1313 E. 60th St., Chicago 37, Ill.

***Oct. 11-13—Philadelphia, Pa.**
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting (Hotel Warwick). Exec. Sec., Robert S. Holmes, 212 Strathcona Hall, New Haven 11, Conn.

Oct. 13-15—Montgomery, Ala.
AMERICAN WATER WORKS ASSOCIATION—Alabama-Mississippi Section. Annual Meeting (Hotel Whitley). Sec., John L. Snow, First National Bank Bldg., Montgomery, Ala.

***Oct. 13-16—Seattle, Wash.**
NATIONAL ASSOCIATION OF HOUSING OFFICIALS. Annual Meeting (Hotel Olympic). N.A.H.O., 1313 E. 60th St., Chicago 37, Ill.

***Oct. 15-16—Phoenix, Ariz.**
AMERICAN WATER WORKS ASSOCIATION—Arizona Section. Annual Convention (Hotel Whitley). Sec., Mrs. Helen Rotthaus, San. Eng. Div., State Department of Health, Phoenix, Arizona.

Oct. 17-20—Boston, Mass.
AMERICAN PUBLIC WORKS ASSOCIATION. Annual Conference (Hotel Copley Plaza). Exec. Dir., Donald F. Herrick, 1313 E. 60th St., Chicago 37, Ill.

Oct. 18-21—Detroit, Mich.
FEDERATION OF SEWAGE WORKS ASSOCIATIONS (Hotel Statler). Sec.-Treas., W. H. Wisely, 325 Illinois Bldg., Champaign, Ill.

Oct. 18-20—Philadelphia, Pa
NATIONAL INSTITUTE OF GOVERNMENTAL PURCHASING. Annual Conference (Hotel Bellevue-Stratford). Exec. Dir., Albert H. Hall, 730 Jackson Place, NW., Washington 6, D. C.

***Oct. 18-22—Chicago, Ill.**
NATIONAL SAFETY COUNCIL. Congress and Exposition (Stevens-Congress-Palmer House-Sherman). Pres.-Vice-Pres., Ned H. Dearborn, 20 North Wacker Drive, Chicago 6, Ill.

***Oct. 20-22—Philadelphia, Pa.**
AMERICAN WATER WORKS ASSOCIATION—Four States and Western Pennsylvania Sections. Annual Convention (Hotel Sheridan). Sec. (Four States), W. A. Welch, Industrial Chemical Sales Div., W. Va. Pulp and Paper Co., 748 Public Ledger Bldg., Philadelphia, Pa. Sec. (Western Pennsylvania), E. P. Johnson, 418 Flannery Bldg., Sta. 13, Pittsburgh, Pa.

***Oct. 24-26—Jefferson City, Mo.**
AMERICAN WATER WORKS ASSOCIATION—Missouri Section. Annual Convention (Hotel Governor). Sec.-Treas., Warren A. Kramer, Div. of Health, State Office Bldg., Jefferson City, Mo.

***Oct. 25-26—Richmond, Va.**
AMERICAN WATER WORKS ASSOCIATION—Virginia Section. Annual Convention (Hotel John Marshall). Sec.-Treas., W. H. Shewbridge, State Office Bldg., Richmond 22, Va.

Oct. 27-29—Riverside, Calif.
AMERICAN WATER WORKS ASSOCIATION—California Section. Annual Meeting. Sec., H. C. Medbury, Water Dept., 425 Mason St., San Francisco 2, Calif.

***Oct. 28-29—LaCrosse, Wis.**
AMERICAN WATER WORKS ASSOCIATION—Wisconsin Section. Annual Convention (Hotel Stoddard). Sec., Leon A. Smith, Supt. Water Works, City Hall, Madison, Wis.

***Nov. 4-6—Atlantic City, N. J.**
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Fall Meeting (Hotel Madison). Sec., C. B. Tygert, Box 178, Newark 1, N. J.

***Nov. 8-10—Asheville, N. C.**
AMERICAN WATER WORKS ASSOCIATION—North Carolina Section, and North Carolina Sewage Works Association. Annual Convention (Hotel George Vanderbilt). Sec.-Treas., George S. Moore, P. O. Box 125, Albermarle, N. C.

***Nov. 8-12—Boston, Mass.**
AMERICAN PUBLIC HEALTH ASSOCIATION. Annual Meet. Exec. Sec., Dr. Reginald M. Atwater, 1790 Broadway, New York 19, N. Y.

***Nov. 9-12—Miami, Fla.**
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Convention (Hotel Everglades). Sec.-Treas., Chief Daniel B. Tierney, 8 Robbins Road, Arlington, Mass.

***Nov. 18-20—Panama City, Fla.**
AMERICAN WATER WORKS ASSOCIATION—Florida Section. Annual Convention (Hotel Dixie Sherman). Sec., S. K. Keller, Box 510, Clearwater, Fla.

***Dec. 13-15—Washington, D. C.**
AMERICAN MUNICIPAL ASSOCIATION. Annual Convention (Hotel Statler). Exec. Dir., Earl D. Mallery, 522-526 Transportation Bldg., 17th and H Sts., NW., Washington, D. C.

Recent City Manager Appointments

CLAIR L. ALLEN has been appointed town manager of Oakfield and Dyer Brook, Maine.

W. GUY ANCELL, manager of Orange, Va., 1932-33; Hopewell, Va., 1934-44; and Staunton, Va., since 1946, has been appointed at Portsmouth, Va.

NEIL W. BARDE, city engineer of Cushing, Okla., has been appointed manager of Guthrie, Okla.

WARREN R. BENSON, formerly Chairman of Board of Assessors at Presque Isle, Maine, has been appointed at Lincoln, Maine.

JOHN BIRD has filled the vacancy at Corinna, Maine.

LLOYD E. BRADY, manager of Hazel Park, Mich., since 1944, has been appointed the first manager of Trinidad, Colo.

J. ORVILLE BUMPUS is the first manager of Konoawa, Okla.

SETH BURNLEY, manager of Charlottesville, Va., since 1932, succeeds W. Guy Ancell at Staunton, Va.

GORDON L. BURT succeeds E. L. O'HARA as manager of Hayward, Calif.

The Village of Barton, Vt., has appointed ERNEST P. DAVENPORT its first manager.

T. D. DAVIS has been appointed the first manager of Nephi, Utah.

H. A. DELLINGER is manager at Osborn, Ohio.

SIDNEY S. FRISSELL, formerly city comptroller at Keene, N. H., has been appointed the first manager of Littleton, N. H.

B. A. KELLEY, manager of Monroe, Maine, since 1946, is now manager of Isleboro, Maine.

NEIL HARR, formerly city engineer at McPherson, Kans., has been appointed at Belleville, Kans.

J. L. HORNER, manager of Pittsburg, Texas, since 1947, has been appointed at Carthage, Texas.

E. E. JUSTICE, acting manager of Marshall, Texas, since January 1948, has received the permanent appointment.

L. M. MCCONNELL, formerly clerk-treasurer of Ketchikan, Alaska, has been appointed its first manager.

BERNARD C. MORSE has been appointed manager at Portland, Mich.

LAWRENCE E. OLSON, manager of San Leandro, Calif., since 1945, received the Ventura, Calif., appointment.

LINWOOD A. PORTER is manager at Norridgewock, Maine.

ARCHIE SCRIBNER, town manager of Patten, Maine, 1940-1943, has been appointed at Van Buren, Maine.

ARCHIE A. STEVENS, formerly town agent and selectman of Charleston, Maine, has been appointed the first town manager of Greenville, Maine.

ROBERT A. SLOANE becomes the first manager of Flushing, Mich.

ALLEN L. TORREY, one of the first students to complete the public management course at the University of Maine, has been appointed manager of Lancaster, N. H.

WILLIAM B. WEBB, formerly director of public works and city engineer of Albert Lea, Minn., has been appointed at Marysville, Mich.

EARL A. WHITE, a graduate student at the University of Maine, has been appointed manager of Belfast, Maine.

HOWARD WILSON succeeds F. R. Buechner as manager of Hamilton, Ohio.

ROSS E. WINDOM, manager of Westerville, Ohio, 1930-40; Portsmouth, Ohio, 1940-42; and Sarasota, Fla., since 1946, received the appointment at St. Petersburg, Fla.

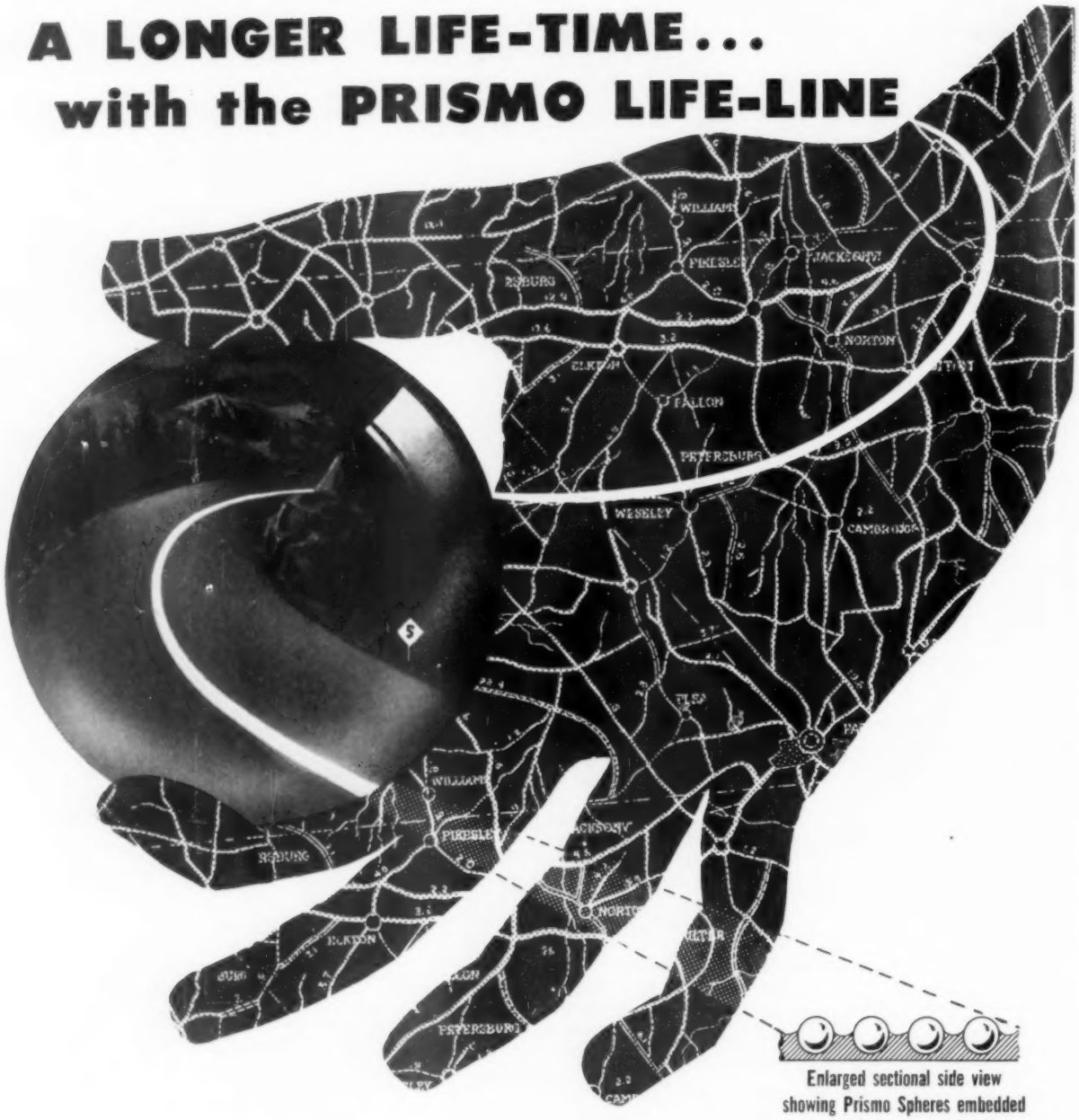
CLARENCE E. RIDLEY
Director
International City Managers Association

Russell City Managership Open

Applications will be received for the position of city manager of the City of Russell, Kans., a city of the second class. The population is approximately 5,500. The city at its last election changed from the mayor-council form of government. The salary is open and will depend upon the qualifications and experience of the applicant.

The city owns the water and electric utilities. Applications will be received by the city clerk.

A LONGER LIFE-TIME... with the PRISMO LIFE-LINE



Enlarged sectional side view showing Prismo Spheres embedded in the Prismo Life-line Binder.

The longest lasting highway center line is the PRISMO LIFE-LINE. To a Traffic Engineer, Prismo is the time tested, proven pioneer. Low initial application cost plus longest lasting qualities makes Prismo the budget's best buy.

Prismo scientifically safeguards highways. Optical clear tiny glass spheres become billions of beacons of safety . . . reflecting life-saving light at the widest angle of sight.

The brightest of all center lines, Prismo reflects the greatest brilliance for the longest time.

WRITE FOR FULLY ILLUSTRATED AND INFORMATIVE PRISMO BULLETINS TODAY!

•

THE PRISMO SAFETY CORPORATION
HUNTINGDON, PA.

City of Detroit Facilitates Motor Freighting

THE first motor-freight line to operate out of Detroit on a regular schedule was started in 1918. There are now 78 independent common-carrier truck lines carrying 30,000 tons of freight into and out of the city daily. Out of this total, 15,000 tons are handled in the truck terminals alone, and the figure is expected to increase shortly to no less than 20,000 tons per working day. Whatever it may have been 30 years ago, the motor-freight industry is now an indispensable part of our transportation system.

Of all cargo carriers, motor-freight lines have the most direct impact upon the everyday lives of the citizens of this town. Their trucks operate over all the main streets of the city, and many of them must penetrate residential districts in order to get to their local destinations.

About 65% of the 55 independent motor-freight terminals in Detroit occupy rented quarters in converted structures not originally designed for freight handling. It is quite obvious that the wide scattering of terminals must complicate traffic problems. Simply to move 30,000 tons of material to and from the terminals daily is in itself a huge job, one which imposes a tremendous load on the street system. But, in addition, there is a considerable volume of interchange freight which must be transferred from one terminal to another, often in partially loaded trucks. On top of all this, shippers' trucks are usually forced to visit several different terminals in various parts of the city to deliver their outgoing freight and pick up incoming consignments.

Lack of modern, well-located terminal facilities increases the travel of trucks in Detroit by hundreds of thousands of miles annually. This adds to the already intolerable traffic load, and at the same time needlessly increases the operating costs of the companies themselves.

Local operators are aware of the existence of these problems and are taking steps to solve them. For example, 37 carriers are already operating out of 14 joint terminals, and 11 others are planning to erect new terminal buildings.

Plan Commission's Recommendations

All this is highly commendable, but the City Plan Commission is of the opinion that the terminal problem cannot be solved piecemeal. In the interest of both the operators and the municipality, it warrants evaluation on a city-wide basis.

The City Plan Commission recommends the establishment of three general terminal areas: one in the vicinity of the Michigan Central Terminal; another in the Milwaukee Junction industrial district, and a third in the vicinity of Wyoming and Michigan Avenues. It is in these three areas that the freight carriers get most of their business.

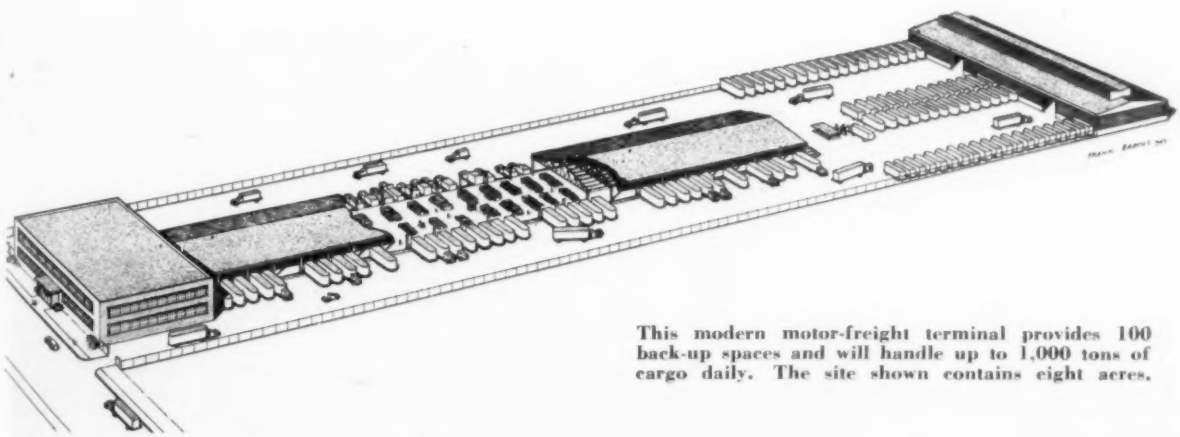
Since the industry is privately owned and operated, the realization of any plan for improving its facilities must depend primarily on the industry itself. However, on three important counts the city can be of very great help:

1. The City Plan Commission can rezone the land in the three proposed terminal areas to make it available for industrial use.

2. The Commission can effect the changes in streets and alleys to make it possible for the trucking companies to secure parcels of land of the right shape and size for terminal development.

3. Where the land is in a blighted area, the city can use the powers assigned to it under the Rehabilitation of Blighted Areas Act to acquire the land needed for the project.

The City Plan Commission urges that the motor-freight industry make use of these three tools. As a next step, it is suggested that the Michigan Trucking Association appoint a committee further to study the problem in cooperation with the Commission. The city government is eager to do all it can within its legal powers to bring modern, efficient motor-freight terminals to Detroit.



This modern motor-freight terminal provides 100 back-up spaces and will handle up to 1,000 tons of cargo daily. The site shown contains eight acres.

Cities get double gains with DUAL

1. Efficient, economical parking control

2. Specialized service . .

HERE'S one of the best proofs of Dual's advantages: City officials who know from experience *agree* that Dual Automatic Parking Meters give *extra* benefits.

One city's Chief of Police praises Dual's superior quality and workmanship—commends its exceptionally low maintenance cost. A Traffic Director goes on record saying Dual's automatic operation makes enforcement very easy. A Traffic Engineer says, "We are unanimous in recommending Duals"—and compliments Dual's Specialized Service.

You can easily see why Duals are favored in hundreds of cities from Canada to the Gulf of Mexico. They're accurate, precision-built instruments—weather-proof and tamper-proof. They're engineered like fine time-pieces. They're rugged and long-lasting.

Don't install *any* parking meter until you get the facts about Dual—and see the extra advantages Dual can give you. For complete information, write The Dual Parking Meter Co., (a subsidiary of The Union Metal Manufacturing Co.) Milford Bldg., Canton 2, Ohio.

DUAL
The ORIGINAL Parking Meter

. . . YOUR BEST ANSWER TO EVERY PARKING PROBLEM

Wichita Finds the Old Offenders Among Its Intersections

By **GEORGE SHEPERD**
Chief of Police, Wichita, Kans.

SELECTIVE enforcement at ten of the most dangerous intersections of Wichita, Kans., cut accidents by 63%. This kind of enforcement is based upon detailed studies of all our intersections and then concentration on the worst.

For some time, our uniformed and traffic divisions have been entirely separate units, with a police captain at the head of each. The traffic division has an accident-prevention bureau which compiles the number, type, and time of accidents at each intersection.

Detailed instructions are issued to beat policemen, motorcycle policemen, and squad-car officers. In addition to their regular duties, they are asked to give special attention to the bad intersections at the hours of the day when traffic accidents showed the highest frequency.

At one intersection where traffic accidents averaged six per month, selective enforcement brought the figure down to one every 30 days. At a second intersection, accidents dropped from five to three monthly; and, at a third intersection, accidents fell from six per month to no accidents during the first months of selective enforcement. Summonses for violations issued at these intersections climbed from 3 to 55 per month, 8 to 17, and 1 to 8, respectively.

Surveys compiled by the accident prevention bureau have brought to light many interesting statistics on the traffic situation in Wichita. For instance, the following, in the order of their occurrence, were found to be the causes of accidents in 1947: liquor violations, disregarding light signals and stop signs, failure to yield the right-of-way to another vehicle, speeding, following another vehicle too closely, mechanical failures, improper turns, failure to signal, and improper backing.

Traffic officials believe that the form of selective enforcement being developed in Wichita is an outstanding feature in the city's safety program of the year. Other successful programs now being followed in Wichita to expedite traffic and to cut down accidents include completing the installation of 500 Micro-Flex 4-way street-name assemblies, installation of two new traffic safety islands, the installation of modern street lights, and the repainting of signal heads and all pavement markings.

Wichita's fatality record in 1947 fell somewhat below figures for the past two or three years. Last year, 13 people died in traffic accidents here, and of these, nine were pedestrians. A strict ordinance on jaywalking, passed by Wichita's five-man board of city commissioners, will probably reduce pedestrian accidents in the future. Wichita completed one period of 163 consecutive deathless days in 1947. At present writing, Wichita has completed 125 days without a traffic fatality.

Seven Keys to Traffic Relief

HUNDREDS of magazine articles and newspaper pages are given to depicting and "curing" the "intolerable" traffic congestion in our cities. Everybody who talks or writes imagines himself an expert in this field. In fact, only traffic engineers, police chiefs, and other responsible officials have any difficulty in solving the traffic problem. Unfortunately, they have to solve it in the streets.

Usually there aren't hundreds of things to do about it. Let us mention seven, and let others remind us of what has been omitted. Over a thousand cities have started toward brass tacks by first installing parking-meters. This abolishes the long-time parker and steps up the turnover of cars at the curb.

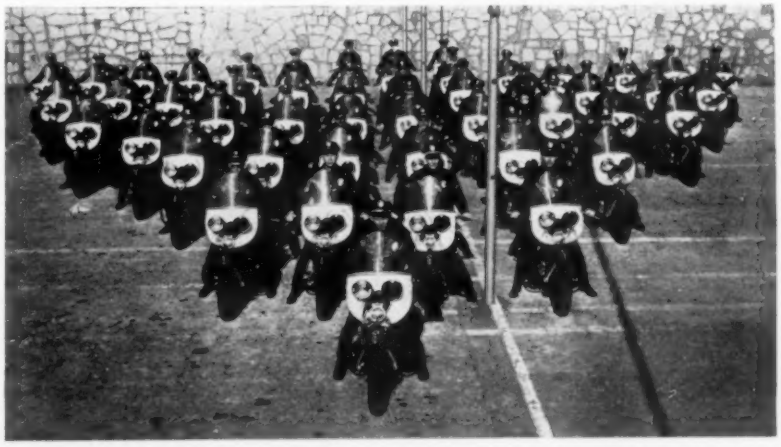
The next step is to recognize the existence of the two-hour or longer parker by providing off-street parking space. More and more cities are constructing metered parking lots.

After these two steps have been taken adequately—how's traffic? If still bad, then suitable regulations are indicated. These include any needs from one-way streets and by-pass thoroughfares to the abolition of parking in the business district. Along with this thinking, and in advance of it as well, much better local transportation should be encouraged and required. Adequate transit is the substitute for automobiles and the only argument justifying their being kept out of crowded districts during certain hours.

The entire traffic signal system should be surveyed, by streets and by intersections. Timing should fit not only the cars on the two or more intersecting streets, but the pedestrians as well. Wide streets raise special pedestrian problems which, unless solved, may slow car traffic on the entire stretch of street. The signal and timing situation should be discussed with the engineers of the traffic signal manufacturers. Nobody else knows as much about what can be accomplished with traffic signals.

Finally, adequate street lighting will permit the traffic procedure to work as smoothly and efficiently by night as by day.

New Motorcycles for Los Angeles Police



Los Angeles motorcycle police officers form a "V" as they display 50 of the 238 new 1948-model Harley-Davidsons, recently purchased by the Los Angeles Police Department. Forty more motorcycles of this type are on order. In addition to these, the department owns 114 Harley-Davidson 1947-OHV models. Approximately 100 motorcycles are equipped with radio receivers. Additional receivers are to be purchased and eventually all motorcycles will be equipped with transmitters.

NEW CONVERTIBLE

CUMULATIVE? Yes

The new Model G PARK-O-METER is interchangeable for either cumulative or wipe-off time at the flick of a lever in the mechanism.

UNIVERSAL? Yes

Model G PARK-O-METER permits instant interchange of dials: short time, 1-hour or 2-hour. Also affords 24 coin-time combinations.

AUTOMATIC? Yes

Naturally the New Model retains the modern, completely automatic operating mechanism that has set PARK-O-METER out in front.

DIE CAST CASE? Yes

The new die cast case gives improved protection against dust and moisture and adds a smooth beauty and brilliance.

RED ARROW COIN SLOT? Yes

The coin-slot marker, cast into the case, colored a brilliant red, adds to simplicity of operation; increases public acceptance.

All these Features are Built into the New CONVERTIBLE PARK-O-METER MODEL G

Without increase of one penny in cost, these new features give PARK-O-METER every advantage suggested by municipal officials throughout the nation. Every feature is incorporated in the engineered precision mechanism so that interchangeability to meet every need is *instantaneous* without use of extra parts. The durable, trouble-proof mechanism is designed for minimum maintenance time and expense. Many damaged parts are instantly replaceable without taking meter out of service.

Ask About the NEW CONVERTIBLE PARK-O-METER

Magee-Hale
PARK-O-METER COMPANY
Commerce Exchange Bldg.
OKLAHOMA CITY 2, OKLAHOMA

Lansing's New Traffic Signals

LANSING'S recent installation of two Model 10 signals, manufactured by the Western Railroad Supply Company, has been successful in eliminating one of our most common types of grade-crossing accidents—driving through the lowered gates. These signals were installed at two Grand Trunk Railway grade crossings, over which 20,000 vehicles pass daily. The most impressive feature of this type of signal is the excellent illumination of the gate, which, together with the side of the street flasher from which the arms operate, give motorists sufficient advance warning of the lowering of the gates. The electrically operated gate is more efficient than the hand-operated or pneumatic type.

An excellent progression of traffic has been maintained on two crosstown routes by the installation of synchronous inter-connected traffic signals. On all future installations in Lansing, where progression is the prime object of signal installation, this inter-connected type of signal will be used. Definite steps are also being taken to provide a more progressive flow of traffic in our congested central business area. Being put into operation is a three-dial type of controller which will permit us to obtain three different types of control settings for the handling of the various types of traffic flow throughout the 24-hour period. Both types of traffic-signal controllers are manufactured by the Eagle Signal Corporation, Moline, Ill.

SIDNEY ANGER
Traffic Engineer
Lansing, Mich.

Day and Night Traffic Speed

TRAFFIC speeds are regulated in every state by statutes, some adequate, some inadequate. This legislation is carried out by speed-enforcement policies which vary from reasonable and good to unreasonable and over-restrictive.

Laws establish most enforcement policies. Therefore, before analyzing speed-enforcement policies, a review of the speed laws of states and cities is desirable. Accordingly, information was sought for this study as to general numerical speed limits, speed rules, differences between day and night limits, and other legal conditions which might influence speed attitudes and policies of police organizations in their enforcement problems. The following information received deals with day and night speed limits.*

Only four of the 32 states furnishing information have different day and night speed limits. In all cases the night limits are lower. One state reduces the day limit of 60 to 55 mph at night. Three other states with a 60-mph day limit lower it to 50 mph at night.

Nine cities reported different day and night speed limits in business districts. It is the tendency to raise the limits in business districts at night with six of the nine cities reporting higher limits. Five of the six cities raise the limit 10 mph, though the final increased limits vary from 20 to 35 mph. The other city raised the limit only 5 mph—from 15 to 20 mph. Three cities lower business-area limits at night. Two of these lower limits by 10 mph and the other lowers by 5 mph; these three changes result in night limits for business districts of 15, 20, and 25 mph.

Nine cities reported different day and night speed limits for residential areas. They were not in each case the same cities reporting different limits for business districts. Eight of these nine cities raised the limits at night. However, the top night limit after the raise is 35 mph. One city raised the day limit of 20 mph in residential districts to 35 mph at night; two cities raised the day limit from 25 to 35 at night; and the other five cities raised their day limits by 5 mph at night. One city lowered the limit in residential areas from 25 mph during the day to 20 mph at night.

* From *Traffic Speed Enforcement Policies*, by the Eno Foundation for Highway Traffic Control, Inc., Saugatuck, Conn.

Philadelphians Like Electric Transit

RECENTLY the Philadelphia Transportation Company ran a public poll to determine preference for the new types of vehicles which they have been purchasing since the war. Out of 1,311 replies to their questionnaire 164, or 12.5%, preferred streamlined streetcars; 128, or 9.8%, preferred modern buses; 938, or 71.5%, preferred trackless trolleys; and 84, or 6.4%, had no preference.

Parking Meters "Slugged"

SALT LAKE CITY police are starting a drive to punish motorists who last year put 64,673 slugs in local parking meters, the Municipal Finance Officers Association reports.

The mayor states that the number of free hours chiseled from parking meters by using slugs increased alarmingly last year. In 1946, 27,289 slugs were found by city meter collectors. Anyone convicted of "slugging" a parking meter in Salt Lake City may be fined a maximum of $299 and sentenced to six months in jail.

Roof-Parking in Queens, N. Y.

This 50,000-square-foot roof-parking lot at Macy's Jamaica, a suburban branch of R. H. Macy, accommodates 150 automobiles. Cars drive up and down ramps inside the building. Truck deliveries are made at a receiving dock in the building's sub-basement to eliminate street-level operations.

Progressive Towns Re-Light for Safety

These "before" and "after" photos show how one eastern city tripled the illumination with L-M Spherolites. Formerly, light on the pavement was .64 lumens per square foot; with Spherolites it is 1.8—and with the same size and number of lamps. Same total wattage—but more efficient utilization of light. And, says the superintendent, there is less breakage, less cleaning, and maintenance costs are substantially lower. Not bad!

Safety goes up... maintenance goes down... with L-M Spherolite

Spherolite luminaires direct a high percentage of the light onto the pavement, spreading the light over a wide area, in a controlled pattern. Here are some Spherolite features:

Versatility: adaptable to all mounting requirements; wide variety of metal hoods, porcelain heads, glassware, holders, deflectors.

Low Maintenance: dust and moisture seals between glass and reflector and hood; easily accessible for relamping. Hoods sealed against dust, moisture insects. L-M fluted reflector by-passes the light around vertical axis of lamp, avoiding heat concentration and assuring full lamp life.

Long life: weather-tight construction maintains reflector efficiency for many years; aluminum and other non-corrosive materials assure long life; heat-barrier hoods prevent cable deterioration.

Engineering Service: need help? ask for an L-M Street Lighting Engineer—trained, experienced men who help you get safe, efficient street lighting to fit your budget.

Want to Know More

Write for L-M's new Spherolite bulletin. Photometric data, I.E.S. recommendations, and other useful information. Details on Spherolite construction and application, on hoods, glassware, standards, brackets, accessories and control equipment including L-M "Wired Radio" control. Ask any L-M field engineer or **write Line Material Co., Milwaukee 1, Wisconsin.**

LINE MATERIAL Street Lighting

L-M DISTRIBUTION EQUIPMENT INCLUDES: Distribution Transformers • Fuse Cutouts and Fuse Links • Lightning Arresters • Oil Switches • Pole Line Hardware • Line Construction Specialties • Underground Equipment • Fibre Conduit • Street and Airport Lighting Equipment • "Wired Radio" Control Equipment • Capacitors

Outdoor Lighting

Mercury-Vapor Lighting In Olympia, Wash.

By CHESTER M. KIRSOP
City Electrician
Olympia, Wash.

DURING the war, Olympia's City Commission made plans for improving the city's street lighting and also the lighting of the main arterial highways U. S. #99, Pacific Highway #101 (the Pacific Coast Highway), and U. S. #410, which intersect in the center of the city. Last summer we completed the installation of the new lighting along the highways.

New lights operated by Weston photoelectric relays which turn the lights on and off in accordance with the amount of daylight.

One hundred forty mercury-vapor lights of 20,000 lumens were installed. The Westinghouse horizontal luminaires are mounted at 28.5 feet on Union Metal Octaflute poles with upsweep arms. The units are spaced approximately 140 feet apart in staggered arrangement. The lights are operated by photoelectric relays, which automatically turn the lights on and off in accordance with the amount of daylight.

The former street lighting was supplied by 2,500-lumen series street lights mounted on brackets on utility company poles at street intersections 300 feet apart. The foot-candle reading for these lights was 2 foot-candles on the street surface directly below the bracket. The amount of light reflected a few feet away from the intersection was so small that it could not be read. In some places, due to the heavy traffic accident record, a few 4,000-lumen directional units had been installed. Thirty-three of these obsolete lights were disconnected at the completion of the mercury-vapor system.

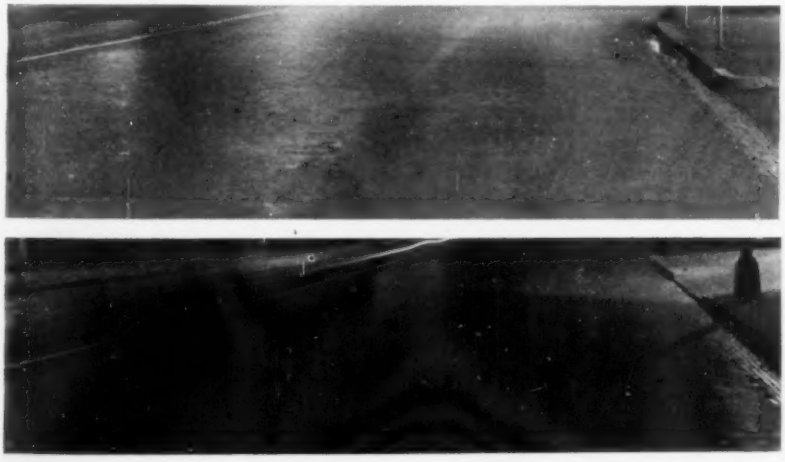
With the new lighting, the measurement of light in front of the lighting standard is 5.6 foot-candles, and nowhere in the major portion of the system does the reading fall below 4.5 foot-candles. Light cut-off is accurate, and there is no apparent glare.

Since much of the route runs through residential districts, parking strips existed, but luminaires and cables were so located as to allow for future street widening with a minimum of disturbance to the installation. The cable was installed in a 1½-inch rigid steel conduit under all street intersections and approaches and for the bridge crossing.

On August 28, 1947, the new lights were turned on at a ceremony in the studios of Olympia's radio station KGY. After a history was given of Olympia's street lighting and new installation, former Mayor J. T. Trullinger pushed a button actuating the photoelectric cells.

The cost for annual illumination is $49 per luminaire, including lamp replacement, patrolling, and cleaning. The total cost of the installation was $62,264, or $451 per luminaire.

Plans are under way for future extension of the lighting system into Olympia, and for new lighting to replace the 28-year-old system in the central business district.



With Olympia's new mercury-vapor lighting (above), the minimum amount of light reflected at any point on the pavement is 4.5 foot-candles. Previously (below), the light reflected a few feet away was so faint that it could not be measured.

Kansas City Lighting Program Moves Forward

OF the 15,472 street lights in the city, 2,886 have been replaced with the new, modern type of lighting units, and orders have been placed for 1,810 additional lights of this type. The entire program will be completed by 1951. The favorable results of Kansas City's new street lights are indicated in the 1947 statistics of traffic fatalities. In 1946, 22 of the 61 traffic deaths were in daylight hours, and 39 in hours of darkness. In 1947, 20 of the 38 fatalities were in daylight hours, and only 18 were in hours of darkness on lighted streets.

Public Acceptance
Earning Ability
Low Platform Cost

ARE REASONS WHY

MEMPHIS operates 204 TROLLEY COACHES

The Memphis Street Railway Company converted recently its last four rail lines to trolley coach service. There are now 204 of these speedy electrics being operated over eight of the system's main lines, totaling 146.96 round trip miles. One reason why trolley coaches were selected to furnish most of the mainline service in Memphis is their high degree of public acceptance. Another reason is that they are economical to operate. All lines showed revenue increases of from 10% to 15% after conversion to trolley coach service. Platform labor costs per mile are lower, too. During the period when both streetcars and trolley coaches were being operated, platform costs per mile for trolley coaches were 12% lower than streetcars. To sum it up—THE PUBLIC LIKES THEM . . . THEY COST LESS TO OPERATE. No wonder there are now 204 trolley coaches in Memphis.

TROLLEY COACH AND STREET CAR
Ohio Brass
LINE MATERIAL AND CAR EQUIPMENT

MANSFIELD, OHIO

CANADIAN OHIO BRASS CO., LTD., NIAGARA FALLS, ONTARIO

2911-T

A Village Goes to Bat

By **FREDRIC T. MAYER***
Young America, Minn.

YOUNG AMERICA, a Minnesota village of only 400 inhabitants, will have a $25,000 baseball park complete with a night-lighting system ready for the 1948 baseball season.

This small village in the center of Carver County has no chamber of commerce. Instead, this handicap is more than offset by an efficient village council, a hard-working fire department, an active VFW post, and several hundred baseball enthusiasts to boost the home team.

The park wasn't organized as a single project. Rather, it snowballed its way from a plan for a minor change in the diamond to a completely new village park.

During the summer of 1946, the council held several joint meetings with the fire department and the baseball team. By the end of August, the group had decided on a limited improvement program. The council agreed to pay for landscaping and changing the diamond. The fire department would finance the construction of a new grandstand. The baseball team would assume the expense of new canvas fencing. Post 1783 of the Veterans of Foreign Wars was to erect a flag pole.

A group of Young America's biggest boosters decided a night-lighting system would make the grounds complete. At a meeting of all interested citizens in June 1947 a board of directors was elected with the power to accept members and sell shares at $100 each. The organization, known as the Young America Athletic Club, agreed to underwrite the entire project. The council gave permission to erect the lights with the understanding that the title would revert back to the village as soon as the system was paid for. The club estimates that the project will be completely paid for in five years out of receipts of night games.

The team arranged its 1947 schedule to play the first half of the season away from home so that the project would be completed and in condition for the dedication ceremony at the first home game. A week before the dedication date, the job of sodding was finished by more than 75 local fans working without charge. The job of sprinkling and rolling the newly-laid sod was also done without charge with equipment donated by the fire department. A nearby creamery offered one of its trucks to supply additional water.

Our water works system has been completed since then, at a cost of $45,000.

As the season progressed, the Athletic Club lost no time in installing the lights. The club's 55 members subscribed a sufficient sum of money to secure necessary equipment and hire the services of technicians to erect towers, lights, transformers and the wiring. The eight 80-foot metal towers and the four 37½-KVH transformers called for in the plans were in place by late August. Special underground wiring and diagrams permitting control of individual lights and individual towers were incorporated into the system by a local electrician. The system, which will be ready for the 1948 season, will furnish 220,000 watts of power. The two main towers mount twenty-four 1,500-watt lights, and the remaining six carry 16 lights each.

The total valuation of Memorial Park is divided as follows: the park and the grandstand, $10,500; the sodding, $500; the lighting, an estimated $14,000. With these impressive figures, is it any wonder that this little village is proud to welcome visiting officials and conduct them through their park?

Representatives of civic organizations from the villages of Gaylord, St. Bonifacius, Belle Plaine, Hutchinson, Shakopee, and Montgomery have inspected the project, and Slayton has asked the cost of a similar lighting system. Interested groups are invited to come to see Memorial Park or address inquiries to Mayor Carl D. Boehmke.

* Mr. Mayer is a journalism senior at the University of Minnesota. Condensed from *Minnesota Municipalities* for March.

New Lighting in Vernon, Texas

WITH the recent installation of 260 modern street-lighting units, Vernon, Texas, has become one of the best-lighted cities of its size in the Southwest. According to S. I. Vaughn, City Electrician, all of the equipment, material, and labor was paid for from the revenue earnings of the City Light Department.

Three distinct types of light are used in the installation. There are 224 standard incandescent lamps of 6,000 lumens, serviced with overhead wiring. Those in the main business district are placed six lights per block, 70 feet apart, on opposite sides of the street. In the lighter traffic areas, four lights, 120 feet apart, are placed in each block and staggered on each side of the street.

Around the County Courthouse and square where a maximum intensity of light is desired, 28 mercury-vapor lights are installed. Each of these lamps is rated at 16,000 lumens, 400 watts, and is connected by underground cable. The average light intensity around the square is 2 foot candles.

The third type of lamp installed is the sodium-vapor light. Eight 10,000-lumen units are installed at the Fort Worth and Denver City and Frisco railroad crossings along North Main Street. Eight of these crossings are illuminated. These lamps, because of their color, serve for a caution signal as well as for street illumination.

Control of the 50-block system is by means of photoelectric relay. This relay works on the same principle as the "electric eye" and is used to turn the lights on and off automatically in accordance with the amount of daylight. The manufacturer of the relays is the General Electric Company.

I.E.S. Recommended Practice Approved By American Standards Association

THE I.E.S. *Recommended Practice for Street and Highway Lighting* has been accepted and approved by the American Standards Association, and is now known as *American Standard Practice for Street and Highway Lighting.*

During the 20 years of the career of the Illuminating Engineering Society's Committee on Street and Highway Lighting, the night use of public roadways has grown greatly. Traffic has increased in speed and density. The studies by the Committee have established a firm relationship between good fixed lighting and traffic safety.

The points covered in the *Standard Practice* are classification of streets and highways, luminaire characteristics and application, design of street and highway lighting, and situations requiring special consideration.

why 3 kinds of lamps for street lighting?

Here we have endeavored to answer the question we are frequently asked—"Should we use incandescent, mercury, or sodium lighting?"

The answer is specific in some cases. It is necessarily broad in others. But, with full facts, a concrete answer can be given for any particular job.

We are the major supplier of luminaires for *each* of these three light sources. This places us, we believe, in a unique position to give you unbiased advice.

General Electric Company, Schenectady 5, N.Y.

Incandescent

For most lighting—where a 6000-lumen lamp is the largest used—incandescent is the only practical system.

Incandescent lighting's place is roughly this: ***Residential,*** with generally the smaller sized lamps. ***Traffic and secondary business streets,*** with medium sized lamps. Finally, ***main traffic arteries*** and primary business district, with lamps of

Sodium

Sodium lighting has an unchallenged but limited place. For some uses, its distinctive yellow color is a "must". Its low operating cost admirably suits it to others—***providing color is not a factor.***

Typical applications are: One or two luminaires to light grade crossings, abutments, dangerous intersections. An installation to mark a through-way—or

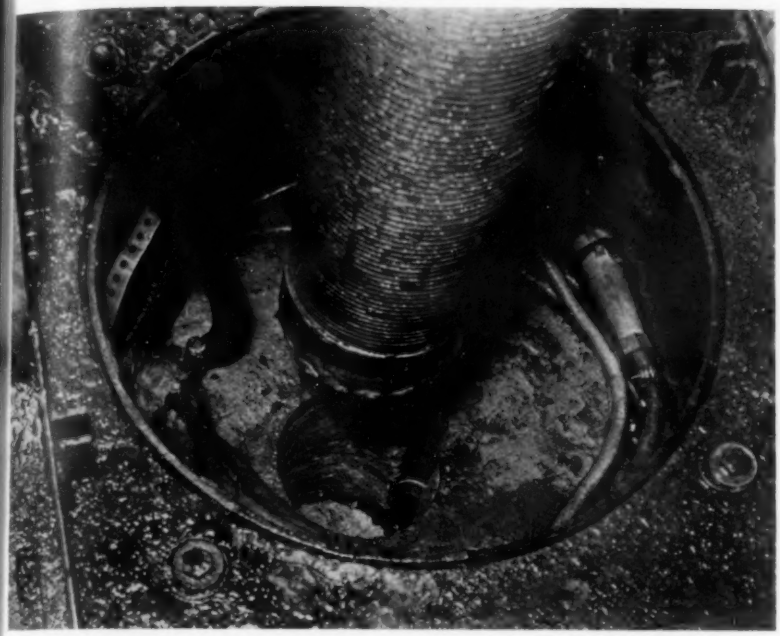
Mercury

The mercury lamp, newest of the three light sources, definitely has its place. But, unlike the others, it has no field particularly its own.

The basic point in applying mercury is that the smallest economical lamp produces 10,000 lumens. So mercury's big field is definitely in high-level lighting.

Its big advantage is efficiency—double that of incandescents. Its color—a cool,

Drilling Three Feet in Concrete



This rotary concrete drill, made by the Rotary Concrete Drill Company, Pasadena, Calif., makes a cut straight down through an abandoned electrical conduit. It can cut a 6¼-inch-diameter, 3-foot-deep hole in 25 minutes.

WHEN the City of Los Angeles decided that the lighting along Hollywood's famous "Radio Row" (Sunset between Wilcox and Gordon) was inadequate, it decided to replace the 18-foot-high light standards then in use with 26-foot lights. However, the new standards were of a slender, modern design and had to be reinforced. The reinforcing posts needed anchoring, thus necessitating holes.

E. A. Zeibarth, Contracting Company, Long Beach, says, "The only thing I knew of that could do the job of drilling 6¼-inch-diameter holes, 3 feet down into concrete pavement, were the large-size drills made by the Rotary Concrete Drill Company, Pasadena."

Zeibarth soon discovered the remnants of former light posts—cable, steel pipe, and electrical conduit. "The drills went right through everything," says the contractor. In straight concrete, the bits, when mounted in the special rig (they also can be hand-operated in electric drill and air drills), made the 707-cubic-inch cut in 25 minutes. On one hole, when an upright piece of pipe had to be cut squarely down the middle, the job took an hour.

The rotary concrete drill used on this job (the type also used for obtaining highway core samples) is the grandpappy of the Rotary Drill line. These rotary drill bits, which are gaining wide use for drilling precision holes in tile, brick, marble, concrete, granite, and stone, range in stock sizes from ¼ inch to 2 inches in diameter and in sizes from 2 inches to 6 inches, and up, on special order.

Nature of Equipment Used

The drills are hand-made from cold rolled steel. The cutters are especially heat-treated, then set in and brazed to the end of the bit shaft at a negative angle. The shafts are machined into a worm for about 3 inches up from the cutter. Since the cutters are set at a negative angle, the action is a powdering or pulverizing one, and the worm spiral picks up the powder and brings it out of the hole. This eliminates the drill bit's sticking in the hole.

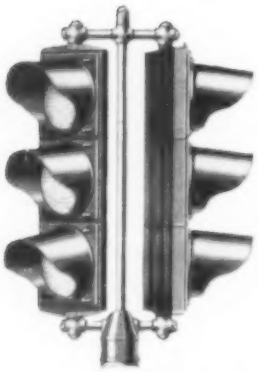
The unique blunt-end design of the drill bit makes it possible to drill right through gravel or round rocks in concrete rather than being deflected by them. The design also reduces breakage to a minimum. The larger sizes, from ⅝ inches up, are made with a hollow center and have a slot in one side. The smaller sizes are solid. These larger bits actually cut a small core which breaks up and passes out through the slot in the side. This makes the bits easier to use as less pressure is required.

Although the concrete and steel pipe of Sunset Boulevard are plenty tough, they didn't begin to dull the sharpness of the Rotary Concrete drill bit used. As many as 3,000 holes have been drilled by Rotary Concrete drill bits without need of re-sharpening.

New "Danger Lanterns"

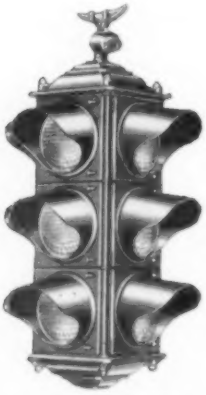
THE old kerosene lanterns, used to mark danger spots, road obstructions, and other temporary hazards, may be on their way out if these latest danger markers, manufactured by the Westinghouse Electric Corporation, come into wide use. At the right in the picture is a cone-shaped airport obstruction marker, painted bright orange, that may be used at day and night. At left is a small marker for night use only. Both units are battery-operated and contain a single lamp. To indicate danger a red neon lamp is used. For other marking needs, 2-watt white, gold, green, or blue fluorescent-type lamps are available. The lamps flash 120 times a minute, and the battery will last 150 hours. Weighing only 22 pounds, the smaller marker is suitable for any type of emergency marker application. The larger marker weighs 34 pounds and is intended primarily for airport use. The small trap door being opened in the metal cone gives access to a chain by which the light can be turned on or off.

CROUSE-HINDS
Traffic Signals and Controllers
..... a type for every purpose



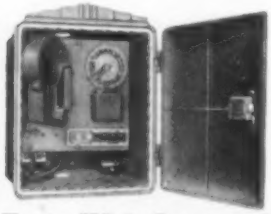
Type TRP-223D

Two-way, Three-section Adjustable Signal For Post Top Mounting



Type TSW-443D

Four-way Three-section Non-Adjustable Signal For Mounting on a Span Wire

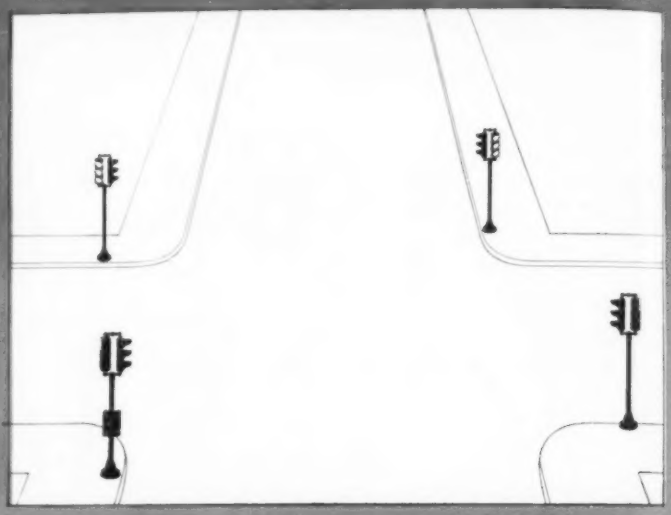


Type KS-1 Automatic Synchronous Controller

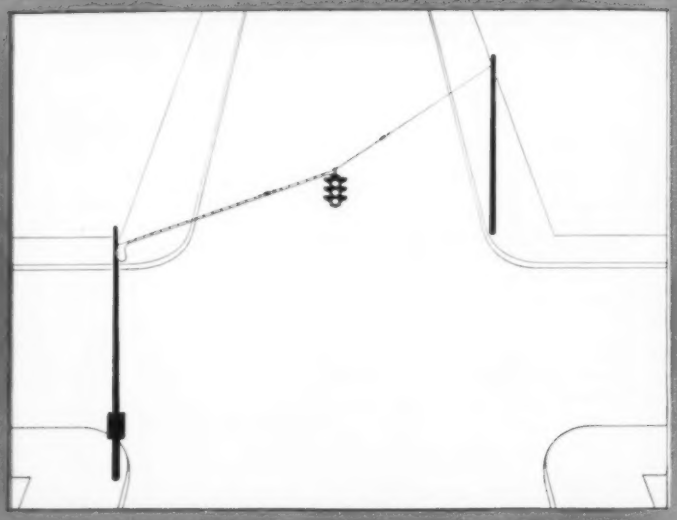
Six Signal Circuits — 4 to 16 Intervals

A Nationwide Distribution Through Electrical Wholesalers

Sustaining Member of I.M.S.A.



Typical Installation of TRP-223D Two-Way Post Mounted Signal



Typical Installation of TSW-443D Span-Wire Signal

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems ... from simple installations up to the most complex heavy traffic problem. Send for your copy.

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Municipal and Civic Publications

Neighborhood Planning

PLANNING THE NEIGHBORHOOD—*By the American Public Health Association Committee on the Hygiene of Housing. Public Administration Service, 1313 E. 60th St., Chicago 37, Ill. 1948. 90 pp. $2.50.*

This volume, the first in a series of three monographs, deals with standards for the environment of residential areas, the physical setting in which homes should be located. It brings into focus the basic health criteria which should guide the planning of residential neighborhood environment, and offers recommendations for the selection of sites and for their development.

The volume is a formulation of principles and standards to be used by the technician in the course of his design solutions and also by the non-technical policy-maker as a frame of reference against which can be tested the adequacy of technical planning solutions.

The report points out that perfection in the building or equipment of the home cannot compensate for an environment which lacks the amenities essential for decent living, and that we must build not merely homes but neighborhoods if we are to build wisely for the future of America.

The majority of the recommendations are applicable to all types of new housing developments except those of strictly rural character. Emphasis is given to developments in open or partially built-up areas, although the standards are also said to be applicable to urban redevelopment programs.

The volume should be of interest and value to various municipal officials, including personnel of planning and zoning boards, engineers, and building, health, park, and school boards. Companion volumes in preparation are *Planning the Home for Occupancy* and *Construction and Equipment of the Home.*

City Aid for Housing

CITY AID FOR HOUSING AND REDEVELOPMENT—*National Association of Housing Officials, 1313 E. 60th St., Chicago 37, Ill. NAHO Publication No. N252. March 1948. Mimeo. 9 pp.*

A concise summary of city action on programs of financial assistance for housing or redevelopment without either state or federal aid. Ten cities have thus far rendered assistance, in various forms, including direct construction of public housing financed through special taxes, bond issues, or appropriations, special taxes or bond issues to finance redevelopment, tax concessions, and donation of locally owned sites.

The report is divided into three headings: "City Funds Finance Housing and Redevelopment Programs," "Cities Have Special Housing Officers," and "Cities Plan for Redevelopment." Addresses of housing and redevelopment authorities are included. A companion statement on *state action* in the housing and redevelopment field (NAHO Publication No. N251) is also available from the Association.

Investment Opportunities in Chicago Rebuilding

SUPPLEMENTS TO AN OPPORTUNITY FOR PRIVATE AND PUBLIC INVESTMENT IN REBUILDING CHICAGO—*By Illinois Institute of Technology, Michael Reese Hospital, South Side Planning Board, Metropolitan Housing Council, PACE Associates, and Chicago Housing Authority. 1948. Mimeo. 32 pp.*

These supplements, containing information on an area survey, relocation, community facilities, and construction costs, bring up to date and amplify some of the material in the report issued last year. The survey results and construction-cost estimates will be found interesting, as well as the fact that the report represents a continuing collaborative enterprise among six different official and unofficial Chicago organizations.

Fire Department Examinations

RECENT FIRE DEPARTMENT CIVIL SERVICE EXAMINATION QUESTIONS—*Published and distributed by International Association of Fire Chiefs. Frank C. McAuliffe, Pres., Chicago, Ill. Daniel B. Tierney, Sec., Arlington 74, Mass. 1948. 32 pp. $1.50.*

Fire department promotional examinations from Evanston, Ill.; Newton, Mass.; Oklahoma City, Okla.; Boston, Mass.; San Francisco, Calif., and Chicago, Ill., are contained in this booklet. No answers are furnished. However, the statement is made that they may be found in various textbooks for firemen and with some research may be arranged to suit the needs of students who may be interested in the subject.

San Francisco Economic Survey

SAN FRANCISCO BAY AREA, ITS PEOPLE, PROSPECTS, AND PROBLEMS—*A report prepared by Industrial Survey Associates for the San Francisco Bay Area Council, 315 Montgomery St., San Francisco 4, Calif. March 1948. 48 pp. Appendix.*

This Bay Area economic survey was undertaken with the aim of bringing up to date some of the main economic facts and trends affecting the future development of the Bay Area as a whole. It provides a basis for answering four main questions:

1. How can the citizens of local communities in the area be led to recognize the importance of thinking and acting in the interest of the area as a whole?
2. How can the development of local communities be further assisted through the resources and leadership of the entire Bay Area?
3. How can the Bay Area's trade and industry be further expanded in the face of growing competition from other areas in the West and Southwest?
4. How can it be determined what agencies should handle such area-wide problems as transportation, water supply, and land-use planning?

There are good discussions on population, employment, and basic resources of the area.

Community-County Relationship Study

IMPROVING GOVERNMENT IN DUNDALK—*By Joseph M. Ray. Bureau of Public Administration, University of Maryland, College Park, Md. 1948. 53 pp.*

An excellent discussion of the problems faced in the unincorporated community of Dundalk in Baltimore County. The report carefully considers existing relationships between the county and the community, and explores Dundalk's three alternatives: annexation to Baltimore City, incorporation as a separate municipality, and improving country government. The report's conclusion deals with specific recommendations for achieving county government reform.

Los Angeles Blight Study

CONDITIONS OF BLIGHT, CENTRAL AREA, CITY OF LOS ANGELES—*Prepared by Department of City Planning, Los Angeles, Calif. 1947. Illus. 47 pp.*

This housing study of the 70-square-mile Central Area of Los Angeles depicts through maps and photographs various conditions of blight existing in the area. The booklet urges that the mayor and city council approve the creation of a redevelopment agency so that public authorities will be in a position to proceed with the details for the redevelopment of blighted areas under the terms of the California Community Redevelopment Act of 1945.

Mayors' Duties Outlined

THE POWERS AND DUTIES OF MAYORS IN WISCONSIN CITIES, A SUMMARY OF WISCONSIN STATUTORY REQUIREMENTS—*Issued by League of Wisconsin Municipalities, 30 East Johnson St., Madison 3, Wis. April 1948. Mimeo. 14 pp.*

An excellent state league project for helping to improve local administration. The preface points out that despite all the technicalities involved in the part-time job of mayor, it is he who usually asumes leadership in improving the caliber of the government of his city and in furnishing the drive to provide properly for the health, welfare, and happiness of the citizens.

Most important of all, the publication declares, it is the responsibility of the mayor to coordinate all of the activities of the city and the various boards, commissions, independent officers and the like, and this involves the exercise of leadership, diplomacy, persuasion—and, above all, patience.

Zoning Boards of Adjustment

SUGGESTED RULES AND REGULATIONS FOR ZONING BOARDS OF ADJUSTMENT IN SMALL MUNICIPALITIES IN PENNSYLVANIA—*Prepared by Government Consulting Service, Institute of Local and State Government, 3437 Woodland Ave., Philadelphia, Pa. March 1948. 7 pp. Mimeo. 50 cents.*

These procedural rules govern meetings, hearings, public notices, appeals, special exceptions, variances, board determinations, and records. With certain adaptations, they can be adopted by any Pennsylvania municipality, and may also prove useful elsewhere.

New York's Water Front

NEW YORK RECLAIMS ITS MAGNIFICENT WATER FRONT FOR RECREATION, RESIDENCE, AND COMMERCE—By Robert Moses. *Reprint of article which appeared in condensed form in the New York Times Sunday Magazine, March 7, 1948. 15 pages. Available from the author at Room 777, 80 Center St., New York 13, N. Y.*

An outline of New York City's many waterfront improvements, which discusses some of the problems still faced by the city before it can go ahead with more of its diverse projects. Although there may be some disagreement with the author's philosophy, the article will be found informative and well illustrated.

Planning in Utah

LET'S PLAN WEBER COUNTY and RECREATION—WHERE IT FITS IN THE PICTURE—*Two reports by the Weber County-Ogden City Planning Commissions, City and County Bldg., Ogden, Utah. Illus. 1948. "Let's Plan," 24 pp. "Recreation," 32 pp. $1.00.*

Two very attractively illustrated reports that do an excellent job of explaining planning programs and needs to the man in the street. Post cards are included with each report asking for suggestions, opinions, and project priorities.

Building Code Progress

NOTES FOR BUILDING INDUSTRY EXECUTIVES AND THE PROFESSIONS—*Building Officials Foundation, 51 E. 42nd St., New York 17, N. Y. No. 1. April 1948. 4 pp.*

This publication contains information on the status of building code reform. It reviews progress on the Basic Building Code prepared by the Building Officials Foundation, which will be distributed to all cities with a population of 10,000 or more for their voluntary adoption sometime later in the year.

advantages of the MI-CO meter hooded coin slot

Coins are slid up under the hood and against the protecting plate at top, then released. They drop part way down and to the left, and then through the meter when handle is turned.

Side view shows position of MI-CO Meter protecting plate at the top and back of the coin slot.

This illustration shows how difficult it is to introduce foreign objects into a MI-CO coin slot. Should it be accomplished, however, the object drops harmlessly through the slot without damaging the mechanism. A serviceman may easily remove any obstruction right at the meter location.

The hood over a MI-CO Parking Meter coin slot protects against snow, ice and freezing rain clogging the slot and preventing the insertion of coins. This is a very important consideration in locations where winters are severe. MI-CO Parking Meters may be depended upon to keep operating in all kinds of weather.

And the hooded coin slot is only one of many advantages to be found in MI-CO Meters. Others are: Fewer moving parts (as low as five on some models); rugged construction; simplicity; unusually low maintenance; quick servicing—right at meter location.

If you are considering the metered plan of parking, be sure to learn what Michaels has to offer. Write, wire or phone for the complete story.

MI-CO METERS, 231 Court St., Covington, Kentucky
Division of The Michaels Art Bronze Company

The Shame of The Cities (Reprinted)

THE SHAME OF THE CITIES—*By Lincoln Steffens. Reprinted by Peter Smith, Publisher, 321 Fifth Ave., New York 16, N. Y. 1948. 306 pp.* $3.50.

First published as a series of articles in *McClure's Magazine*, and in book form in 1904, this present reprint edition once again makes available for municipal and civic libraries the amazing accounts of the corruption and graft which existed in the country's major cities at the turn of the century. The author's many shrewd comments about political methods, bosses, the lack of civic pride and "shameless citizenship" still carry considerable impact. The lessons and experience distilled in the volume should help renew the reader's awareness of his own civic affairs and municipal management.

World War II Reflections

ADMINISTRATIVE REFLECTIONS FROM WORLD WAR II—*By Luther Gulick. University of Alabama Press, University, Ala. 1948. 139 pp.* $2.50.

Based on the author's intimate knowledge and experience with a variety of top wartime agencies, this little volume contains much distilled wisdom and insight on the nature of planning and administration within a democratic framework. Municipal administrators can learn a great deal from some of the author's conclusions and comments on points such as the following: The need of a clear statement of purpose universally understood as the outstanding guarantee of effective administration; the translation from purpose to program as the crucial step in administration; coordination as the indispensable dynamic principle of effective action; planning as an essential and continuous aspect of management; and the support of public opinion as an essential for good administration under American conditions.

New National Tax Journal

NATIONAL TAX JOURNAL—*Published quarterly by the National Tax Association. Vol. I, No. 1, March 1948. 96 pp. Ronald B. Welch, Sec., National Tax Association, P. O. Box 1799, Sacramento 8, Calif. Single copies,* $1.25. *Yearly subscription,* $3.75.

Edited by Professors Roy Blough and Richard Goode of the University of Chicago, the 33-year-old Bulletin of the National Tax Association has now been transformed into a quarterly *National Tax Journal*. The publication is intended to provide a forum for the discussion of the broad economic and social issues of alternative tax and expenditure policies.

Some indication of the publication's scope can be seen from the contents of the first issue. The article titles include "War and Postwar Developments in the German Tax System," by Mabel Newcomer; "Neutrality in Taxation," by Harold M. Groves; "The Admissions Tax," by George E. Lent; "An Incentive Tax Proposal for Alleviation of the Housing Shortage," by Jean Bronfenbrenner; * "Incidence of the Corporation Income Tax," by Carl Shoup, and "Comparative Tax Loads on Railroads in Nine Southern States," by James W. Martin and Beulah Lee Pardue. Other articles trace developments in the federal and state tax fields.

* See p. 129 for comment by Prof. E. H. Spengler on this article.

Rubber Products

A.S.T.M. STANDARDS ON RUBBER PRODUCTS—*By the American Society of Testing Materials, 1916 Race St, Philadelphia, Pa. February 1948. 588 pp.* $4.00.

A compilation of standards covering all of this type of material issued by the Society. Of particular interest to municipal officials will be sections devoted to rubber hose and belting; rubber gloves, matting, and tape; rubber-coated fabrics and insulated wire and cable.

Annual Report Specifications

SPECIFICATIONS FOR THE ANNUAL MUNICIPAL REPORT—*By Clarence E. Ridley and Herbert A. Simon. The International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill. 1948. 52 pp.* $2.00.

This publication, containing suggestions for the content, preparation, design, publication, and distribution of annual municipal reports, brings together material previously published by the International City Managers' Association—material which has been carefully checked and brought up to date. The booklet's emphasis is on informing the busy citizen as to the return in service he gets from his tax dollar.

The report's chief contribution is a checklist of items of information on each municipal activity which it seems desirable to include in an annual report. To illustrate the manual's recommendations, 18 report pages are reproduced from various municipal sources.

The sections on the preparation of copy and publication and problems of layout and design contain many hints that should prove helpful to those responsible for annual reports.

Recreation for Negroes in Philadelphia

RECREATIONAL FACILITIES AND NEGRO-WHITE RELATIONS IN PHILADELPHIA—*By G. Gordon Brown, Bureau of Municipal Research, 311 South Juniper St., Philadelphia 7, Pa. 1947. Mimeo. 53 pp.*

This excellent study examines the recreation facilities available to the Negro population of Philadelphia, and assesses the results in terms of the effects of the recreational pattern on Negro-white relations. The report's conclusions indicate that the facilities geographically available to Negro areas are, generally speaking, less in proportion than those available to the city as a whole, and that the prejudices of some of the other racial groups living within or near the Negro areas limit the availability of even those facilities which are situated where the Negroes might be expected to use them.

Lessons from Canada's Tax Methods

THE PROPERTY TAX IN CANADA AND THE UNITED STATES—*By Harold M. Groves. Article in* Land Economics. *February 1948. 8 pp. Reprints available upon request to the author, Department of Economics, University of Wisconsin, Madison 6, Wis., or to Land Economics, at 25 cents each.*

A thoughtful evaluation of Canadian property taxation which shows how Canada's land value system differs from that in use in Australia. The article outlines lessons that the United States can learn from Canada concerning the selection of a suitable property-tax base, and shows how the Canadians have generally avoided the mistake of binding their municipalities with property-tax ceilings. The discussion is extended in the May issue of *Land Economics* with an article on administration and supplementation.

Citizen Participation

CITIZEN PARTICIPATION IN GOVERNMENT, A STUDY OF COUNTY WELFARE BOARDS—*By Helen E. Martz. Public Affairs Press, 2153 Florida Ave., Washington 8, D. C. 1948. 63 pp.* $1.00.

This book examines the increasing use of citizens in public administrations, with particular reference to county welfare boards. It examines in detail the actual day-to-day workings of a number of boards, rather than merely speculating on what might be a good idea.

The study is a contribution to an important area of the democratic process. It will be useful to public officials who want to help their board members do a more effective job. It will also be helpful to the unpaid participants who regard board duty as something more than a political payoff or a chance to get personal publicity.

Zoning Administration

ZONING ADMINISTRATION—*A Manual Prepared by the Broome County Planning Board, 109 County Office Bldg., Binghamton, N. Y. May 1948. Mimeo. 16 pp. 35 cents.*

The suggestions in this manual are designed to promote both economy and efficiency in zoning administration. The recommendations are specific and practical. The report should help local officials understand the basic principles of zoning, aid in the standardization of zoning administration throughout the county, and call attention to new or overlooked methods of zoning administration which might be included in existing or new ordinances.

Pennsylvania Local Taxes

PENNSYLVANIA'S NEW LOCAL TAX LAW IN OPERATION—*Research Bureau, Pennsylvania State Chamber of Commerce, State Chamber Bldg., Harrisburg, Pa. Bulletin No. 123. April 1, 1948. 16 pp.*

This report summarizes developments to date under authority of Pennsylvania's new 1947 local tax law, Act. No. 481, which, with certain qualifications, authorizes nearly 3,600 political subdivisions to impose taxes upon "any and all subjects of taxation" not already levied upon by the state. The report points out that the "tax blanket" may have two layers of thickness where a school district is coterminous with a city, borough, or first-class township. Also, the tax blanket may bring difficulties where two or more adjoining local units decided to levy wage or income taxes.

Amusement taxes appear to be the most popular new levy with local officials in Pennsylvania. As of April 1, 55 political subdivisions reportedly had adopted such taxes and 32 others were considering it. Information is also contained in the report on the income taxes levied by 20 other political subdivisions, including 5 cities, 4 boroughs, and 11 school districts. Severance taxes—most of them on coal—mercantile taxes, and per capita taxes are also discussed.

State Tax Trends

RECENT TRENDS IN MAJOR STATE TAXES, 1941-47—*The Tax Foundation, 30 Rockefeller Plaza, New York 20, N. Y. February 1948. Mimeo. 99 pp.*

A detailed analysis of state tax-revenue trends since 1941 which covers such subjects as the ratios of increase in state taxes, factors influencing the increase, revenue yield, and variations of increase and yield among the states. Each chapter deals with a different type of tax.

The report reveals that 1947 tax revenues in 35 states were from 51 to 148% greater than in 1941, and that several so-called "poor" states now receive more state tax revenue than so-called "wealthy" states of comparable population.

Arkansas' Community Development

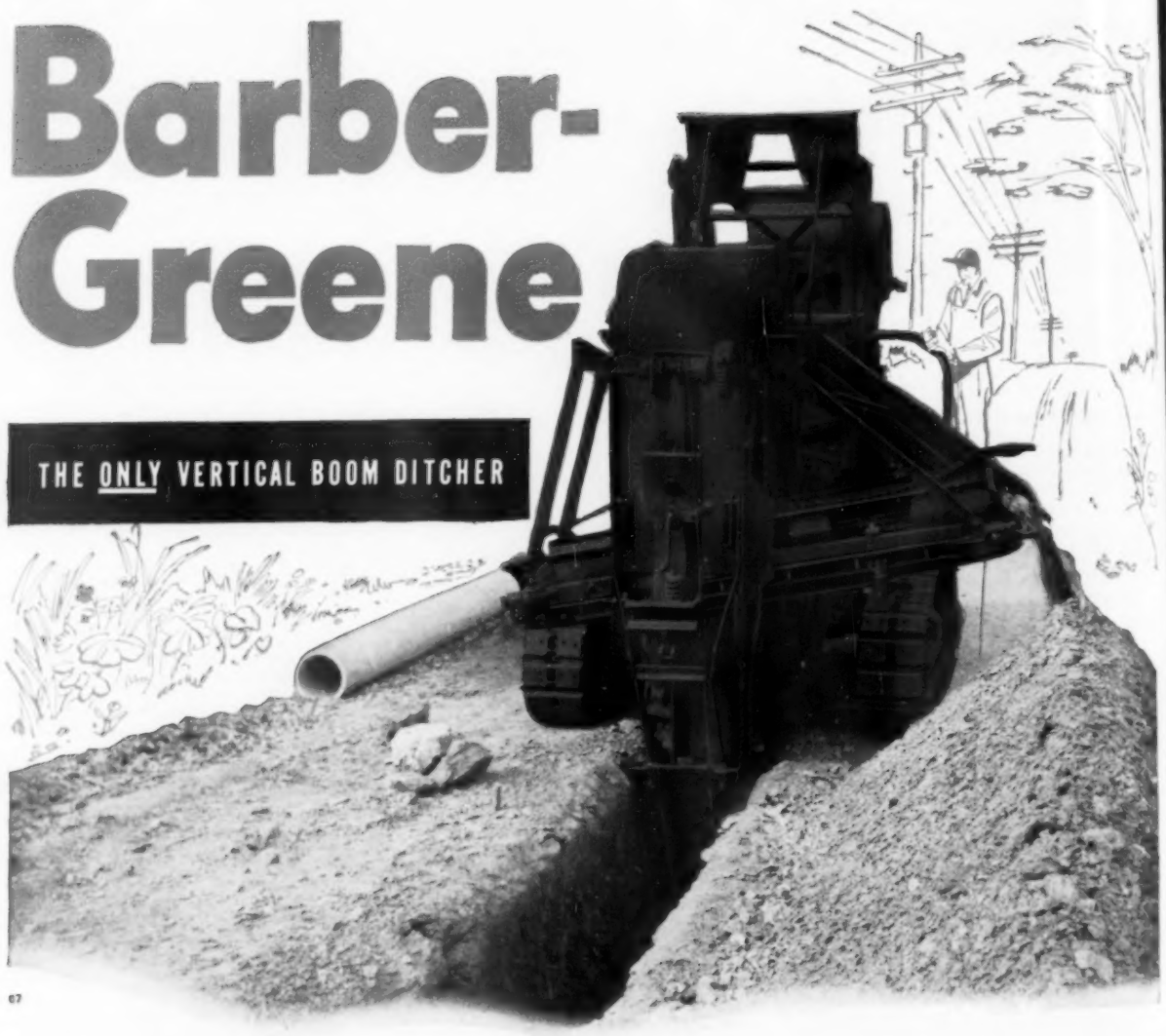
LET'S BUILD A BETTER ARKANSAS *and* BUILDING YOUR TOWN—A GUIDEBOOK FOR ARKANSAS COMMUNITY DEVELOPMENT COMMITTEES—*Published jointly by Arkansas Resources and Development Commission, Arkansas Economic Council, and State Chamber of Commerce, 120 E. Second St., Little Rock. Illus. 1948.*

These two excellent, illustrated publications are evidence of a growing citizens' movement in Arkansas for coordinated programs of community development. The first pamphlet, containing 16 pages, points out some of the needs of Arkansas towns and communities.

The second booklet, of 50 pages, contains practical plans, suggestions, and ideas for the work of community development committees. It is based on a cold, factual inventory of a town's assets and liabilities, and contains a number of check lists that can be used in determining individual community needs. The booklet suggests that local Chambers of Commerce should spearhead the movement for community improvement and get the job done.

Barber-Greene

THE ONLY VERTICAL BOOM DITCHER



digs clean—leaves no ramp • discharges on either side

Here's an exclusive ditcher feature that saves a lot of hand labor. The Barber-Greene's vertical boom digs *straight down*, right up to walks, foundations, underground piping and mains, etc. *There's no ramp to run up digging costs.*

Closely spaced, self-cleaning "kick out" buckets, traveling at high rate of speed, cut like a milling machine . . . leave a clean-walled trench. It's this efficient operating principle that gets the B-G Ditcher through materials as tough as coral rock — down to 8 feet, 3 inches; widths up to 24 inches. Feeding speeds range from 10 inches to 8 feet per minute.

An adjustable spoils conveyor discharges on either side, and the automatic overload release protects both the machine and hidden objects.

Find out how this compact, maneuverable, easily controlled unit can keep your trenching costs down . . . and what varied work it will perform.

BARBER • GREENE COMPANY, AURORA, ILLINOIS

Constant flow Equipment

LOADERS PERMANENT CONVEYORS PORTABLE CONVEYORS COAL MACHINES BITUMINOUS PLANTS FINISHERS DITCHERS

Matching Costs and Taxes in 1952

GOVERNMENT COSTS AND TAX LEVELS—*By Lewis H. Kimmel. Published by The Brookings Institution, Washington 6, D. C.* 1948. 153 *pp.* $2.50.

The objects of this study were to estimate as accurately as possible the magnitude of federal, state, and local expenditures for the fiscal year 1952, which is assumed to be neither a boom nor depression year, and to analyze what will be involved in raising the large volume of tax revenues.

The estimates are presented by functions for each of the three levels of government, and all governments combined, in four summary tables. The apportionment among the several tax sources suggested by recent trends is considered. Indicated total taxes for 1952, together with those for 1940 and 1946, are compared with national income in a separate summary.

Considered in connection with the factors making for increased expenditures, continued existence of a conflict between demands for tax reduction and public services is suggested. An interesting chapter on local taxes and other revenue shows that local governments will need revenues of about 8.4 billions in 1942 in order to cover their expenditures. This contrasts with expenditures of about 5.5 billions in 1940.

See page 141 of this issue.

Reader's Guide to Town and Country Planning

TOWN AND COUNTRY PLANNING—A READER'S GUIDE—*By F. J. Osborn. Published by the Cambridge University Press for the National Book League, 7 Albemarle St., London W. 1.* 1947. 10 *pp. One shilling net.*

This is an excellent book list designed to introduce general readers to as many aspects of planning as possible. For planners and technicians associated with planning, the list will be useful for background and context of their special field. It contains a number of references usually not included in American bibliographies. The short comments on each reference, the introduction's "humanist" approach to the subject, plus the attractive format, make this little pamphlet a valuable addition to any planning library.

Good Housing Pays

DOES GOOD HOUSING PAY?—*By Warren P. Whelan. A thesis reproduced by the School of Applied Social Sciences, Western Reserve University, 2117 Adelbert Road, Cleveland 6, Ohio.* 1948. *Mimeo.* 61 *pp.* $1.00.

This report compares family living problems and municipal costs in two areas of Cleveland. Although the study is of small scope, it should be of interest because of the rigorous methods used. It demonstrates that the values of good housing can be stated in objective terms and that facts can be collected for the analysis of these values.

Advance Planning Program

REPORT ON PLAN PREPARATION OF STATE AND LOCAL PUBLIC WORKS—*Bureau of Community Facilities, Federal Works Agency, Washington 25, D. C. March* 1948. 70 *pp.*

This is a comprehensive report of achievement under the advance planning program. It shows that it has assured the planning of $2.4 billion worth of federal public works. Federal planning advances have amounted to $60 million, almost all of which will be repaid to the United States Treasury as the planned public works are placed under construction.

The Bureau of Community Facilities, the report declares, has always had a volume of applications far in excess of the money available for approval. As of June 30, 1947, the day on which the authority to make new advances expired, there were under review some 2,300 applications for advances in the amount of $33,000,000 and representing public works with an estimated total cost of $1,100,000,000. By that time virtually all the funds available for planning advances had been committed.

The report urges the enactment of legislation in 1948 to continue the highly practicable and successful advance planning program.

Other Reports Received

ANN ARBOR, MICH.—Garbage Collection Practices in Michigan Municipalities, July 1947. Published by the Michigan Municipal League, 205 South State St., Ann Arbor. Tables. Mimeo. 7 pp. $1.00.

ANN ARBOR, MICH.—Salary and Wage Data, March 1948. Compiled by the Municipal Personnel Service, 205 South State St., Ann Arbor. Tables. Mimeo. Unpaged. $1.00.

ANN ARBOR, MICH.—Vacation and Sick Leave Practices, August 1947. Compiled by the Municipal Personnel Service, 205 South State St., Ann Arbor. Tables. Mimeo. 5 pp. $.50.

ATHOL, MASS.—Annual Report of the Water Commissioners, 1947. Tables. 19 pp.

CHESTER, NOVA SCOTIA—Proceedings of the Forty-second Annual Convention of the Union of Nova Scotia Municipalities, September 1947. Tables. Illus. 104 pp.

CHICAGO, ILL.—Annual Report of the Department of Public Works, December 31, 1946. Charts. Tables. 360 pp.

LEXINGTON, KY.—Budget, 1948. Audit Report, 1947. Tables. Charts. 81 pp.

LITTLE ROCK, ARK—Statement of Financial Information, 1946-1947. Report of City Clerk. Illus. Tables. 44 pp.

LOS ANGELES, CALIF.—Control and Preservation of Records and Files. Published by the Bureau of Budget and Efficiency, March 1948. Tables. Mimeo. 26 pp.

LOS ANGELES, CALIF.—Favored Industries in Los Angeles, 1948. The Haynes Foundation, 2324 South Figueroa St., Los Angeles 7. Tables. 25 pp.

LOUISVILLE, KY.—Annual Report of the Director of Finance, 1946-1947. Tables. Graphs. 70 pp.

MASON CITY, IOWA—Annual Report, 1946-1947. Tables. 21 pp.

MINNEAPOLIS, MINN.—Financial Statistics of the City of Minneapolis, 1948. Issued by the Board of Estimate and Taxation, City Hall, Minneapolis. Tables. Graphs. 31 pp.

NASHVILLE, TENN.—Industrial Resources of Tennessee, Revised Edition, 1948. Industrial Regulation Taxes and Licenses, Volume V. Published by the Tennessee State Planning Commission, 432 Sixth Ave. North, Nashville 3. Tables. Graphs. 14 pp. $0.50.

NEW KENSINGTON, PA.—Annual Report of the Controller, December 1947. Tables. Mimeo. 30 pp.

NEW ORLEANS, LA.—Annual Report, 1947. Published by the Department of City Civil Service, City Hall Annex, New Orleans 12. Graph. Illus. 16 pp.

NEWARK, N. J.—Health Report, 1947. Published by the Department of Health, Newark. Tables. Graphs. Mimeo. 26 pp.

NEW YORK, N. Y.—Price List of American Standards. Published by the American Standards Association, 70 East 45th St., New York 17. March 1948. 24 pp.

PORTSMOUTH, VA.—Annual Report, 1947. Published by the Portsmouth Water Department. Tables. Illus. 21 pp.

RICHMOND, VA.—Extension of Service to Subdivisions. League of Virginia Municipalities, 902 Travelers Bldg., Richmond 19. April 1948. Mimeo. 10 pp. $.50.

SEATTLE, WASH.—The Legislature and the Legislative Process in the State of Washington. Bureau of Governmental Research and Services, University of Washington, Seattle, February 1948. Maps. Mimeo. 34 pp.

SPOKANE, WASH.—Annual Report of the City Auditor, December 1947. Supplement to *Official Gazette* May 1, 1948. Tables. Charts. 108 pp.

UNITED STATES—Summary of County Government Finances in 1946. Department of Commerce, Washington, D. C. Chart. Tables. 11 pp.

WINSTON-SALEM, N. C.—Statement of Financial Information, January 1948. Tables. Unpaged.

Planning and Housing Reports

COLUMBIA, S. C.—Towns of South Carolina. South Carolina Research, Planning and Development Board, Wade Hampton State Office Bldg., Columbia. September 1947. Tables. 64 pp.

EASTON, PA.—Preliminary Report to the City Planning Commission, 1948. Submitted by Morris Knowles, Inc., Engineers, Pittsburgh 22. Mimeo. 7 pp.

KANSAS CITY, MO.—Master Plan for Kansas City. City Plan Commission, Kansas City, September 1947. Illus. Maps. 28 pp. $1.00.

SPRINGFIELD, VT.—A Master Plan for the Future Development of Springfield, 1946-1947. By the Planning Commission, Springfield. Illus. Graphs. 48 pp.

URBANA, ILL.—Recreational Possibilities of Southern Illinois. By K. B. Lohman and N. G. Bitterman. Joint Committee on Southern Illinois, 205 David Kinley Hall, University of Illinois, Urbana. Illus. 25 pp.

WASHINGTON, D. C.—"Confidential from Washington." By the George Washington University, Washington. No. 44. March 1948. Illus. Maps.

WASHINGTON, IND.—Our Town. Published by the Washington Community Association, Washington. 1917. Illus. 15 pp.

WAUKESHA, WIS.—Zoning Ordinance for the City of Waukesha, as amended up to December 1947. Prepared by the City Plan Commission, Waukesha. Map. Unpaged.

WINNIPEG, CANADA—Preliminary Reports on Neighborhoods. No. 5 of Master Plan Reports. Prepared jointly by the Metropolitan Planning Committee and the Winnipeg Town Planning Commission. Winnipeg, 1947. Maps. Charts. 83 pp.

Small City Studies Improvements

(*Continued from page* 153)

and expressed again the Council's desire for their consideration by all citizens.

The Public's Questions Answered

Arrangements had been made to collect written questions, which were sorted into subject groups by the officers of the cooperating associations. Following the formal presentations by each agency, their representatives answered the written questions. The topic of greatest interest was the program of the Board of Education, but the Board of Recreation, the Library, and the proposals of the Common Council came in for attention.

The consensus was that the discussion had been fruitful for everyone, and the fact that so many citizens turned out to weigh the proposals showed a strong civic interest. Many critical questions were asked, but there was no formally expressed opposition to any of the building proposals, an indication that there is a general recognition of the fact that such expenditures are necessary as rapidly as the cost can be digested without too great an impact on the tax rate.

The Amazing

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SELF-ENERGIZING PARKING METER*

* Reg. Trade-mark
U. S. Patent 2430384
Others pending

Yes, AUTOMATON actually runs without winding! Not for hours . . . not for 3 to 7 days . . . but for its lifetime! Another exclusive advantage of AUTOMATON is its functional modern design. Here is a Parking Meter whose styling has a purpose. There's utility, as well as beauty, in its watertight Turret Top, one-piece sealed plexiglass Window, and finest aluminum alloy Housing — anodized to permanently resist oxidation, match scratches, and discoloration. No other Automatic Meter offers the benefits (of convenience, enforcement, and low maintenance) your city will derive from the amazing new AUTOMATON.

THERE WILL ALWAYS BE

THE MILLER METER

Over 200,000 in use in over 600 American cities

- FULLY CUMULATIVE!
- TWO VIOLATION FLAGS!
- NO WINDING EXPENSE TO THE CITY!
- COSTS LESS TO MAINTAIN!

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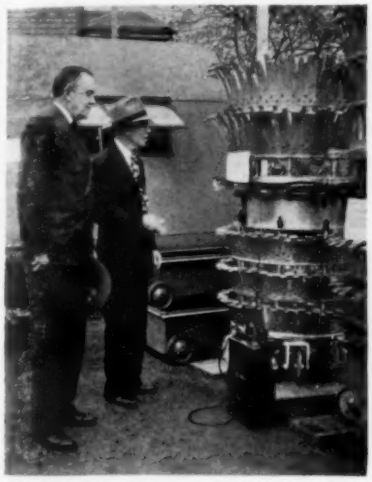
835 N. WOOD STREET • CHICAGO 22, ILLINOIS

WORLD'S LARGEST AND ONLY EXCLUSIVE MANUFACTURER OF PARKING METERS

News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings

Millionth Foot Lined—
Centriline Marks Milestone
In Pipe-Lining Footage



Centriline's General Manager I. T. Callister, right, and Newark's Construction Engineer for the Division of Water, Laurie Leedom, left, examine the pipe-cleaning equipment used in the pipe prior to its being lined.

Last April 21, water-works notables from the New York metropolitan area gathered at Newark to witness the lining by the Centriline Co., 140 Cedar St., New York City 6, of its millionth foot of pipe. The particular length of pipe was part of a 36-inch riveted steel section forming a portion of a 67,900-foot project. The lining work on the project was about half finished when the millionth-foot mark was reached. Albert G. Perkins, Grand Island, N. Y., inventor of the lining machine, was on hand to witness the record-making work.

To bring the demonstration close to the eyes of everyone, Centriline removed about 20 feet of the pipe and mounted it on a wood cradle at the street level. On bulletin boards at the site of the ceremony were listed the previous projects that together totaled the required number of feet. Also displayed were the sand, portland cement, and natural cement used in the mortar. The spot in the street where the pipe was removed also was open for inspection, and showed the way the pipe looked after cleaning and before receiving the layer of mortar lining.

Also taking part in the ceremony was the National Water Main Cleaning Co., of New York City, which cleaned the steel main prior to its lining. The cleaning equipment used in the line, plus the two-way radio equipment used to help the workmen control the cleaner's use, also were available for inspection.

Newark's Division of Water in the Department of Public Works was represented by William G. Banks, Division Engineer; L. Dudley Coles, Chief Engineer, and Laurie M. Leedom, Construction Engineer. Representing the Centriline Co. was H. Seaver Jones, president; I. T. Callister, general manager, and R. G. Counselman, sales manager. From the National Water Main Cleaning Corp. were J. A. de Camp, president, and J. A. Frank, vice-president.

Workmen prepare the equipment for the pipe-lining operation.

Water Works men gather to see the millionth foot of cement lining applied by the Centriline process.

Los Angeles Gets New Trash Receptacles

The City of Los Angeles has recently carried forward their cleaner-streets campaign by the installation of 575 new trash receptacles in the heart of the business section.

Made entirely of corrosion-resistant aluminum sheet and angles, the receptacle requires no paint. Provided with a positive anchor plate on the bottom which allows a spring mounting when used with a spring tie-down bolt, the receptacle is less liable to damage resulting from too rigid a tie-down. It has a capacity of 6 cubic feet, large inlet and outlet openings, and a sloping bottom.

The receptacle is manufactured by The Smithson Co., 219 South Mednik Ave., Los Angeles 22, Calif., and is so designed that if small fires start in the interior they will be smothered automatically, preventing their spread to other objects.

You can't afford to be without the

Gar Wood LOAD-PACKER

FOR GREATER CLEANLINESS AND BETTER HEALTH . . .

FOR MUCH LOWER GARBAGE & RUBBISH COLLECTION COSTS

Protect the health of your community with the Gar Wood Load-Packer. Do away with rats, flies and other vermin-carrying pests that spread disease and start epidemics. Modernize your collection system with the *only* fully enclosed sanitary refuse unit that really prevents bacteria-laden garbage from slopping into the streets. Eliminate the old, offensive open type garbage and rubbish collection trucks. Help build a health record of which your city can be *proud*. Win the praise of doctors and householders everywhere with the Gar Wood Load-Packer.

Costs go down too! Hydraulic compressing action allows for greater loads and fewer trips to the dump or incinerator. Results in big savings in gasoline, oil, tires and maintenance.

Low loading height allows faster, easier loading while reducing fatigue and eliminating risk of injuries to the operator. It's easy to operate with push button control.

Write for completely illustrated folder on how the Gar Wood Load-Packer will reduce disease in your community and save money at the same time.

3454

What users say!...

"It removes virtually all of the fly annoyance which was attendant to garbage collection."

●

"They have cut our cost approximately 35% and at the same time rendered a much better service as far as sanitation is concerned."

●

"Savings in cost of operation are sufficient to pay for the equipment (4 Load-Packers) in 12 months time."

(NAMES OF USERS ON REQUEST)

GAR WOOD INDUSTRIES, INC.

GAR WOOD GW INDUSTRIES

WAYNE DIVISION, WAYNE, MICH.

Other Products—Hoists • Dump Bodies • Winches • Cranes • Tanks • Tractor Equipment
Ditchers • Shovels • Finegraders • Spreaders • Truck Patrols

See all the improved Gar Wood Products at the Road Show.

Some Uncommon Municipal Operations

First-hand facts about some not-too-well-known utility products extensively used by municipalities and distributed by the Graybar Electric Co., New York 17—Disconnecting High Voltage; Producing and Controlling Good Air; Pulling and Lifting; Fluorescent Lighting

SO MANY products used by municipalities are distributed by the Graybar Electric Company, New York 17, and 98 other cities, that a brief history of the company may be useful to municipal purchasers. Graybar was incorporated in 1925 to distribute generally those products of the Western Electric Company that were not required by the Bell Telephone companies, as well as thousands of items made by manufacturers other than Western Electric. So widespread were the markets for these products that an effective system of distributing offices and warehouses had to be built up. In 1929 Graybar became employee-owned, and now a very high percentage of employees participate in the ownership of its 98 offices and warehouses. Calls upon them for allied products resulted in the addition of manufacturers until today there are over 200 manufacturers distributing through Graybar. The product lines now include street lighting, flood lighting, interior lighting, portable lighting units, traffic signals, horns and sirens, communications, and wiring. The whole adds up to a specialized electrical supply service for municipalities. Graybar representatives must necessarily be informed on the electrical maintenance requirements of traffic-control system, street lighting, and other electrical needs, and can be of service to cities planning new services or extensions. Manufacturers in this group were invited by THE AMERICAN CITY to discuss municipal applications of their products. Some of these speak below through representatives who will furnish city officials with details.

Disconnecting High Voltage In Close Quarters Safely

In generating stations, substations and outdoor transformer stations, it is necessary from time to time to disconnect high voltage cables in order to work on oil switches, etc. A common method is to pull a blade-type disconnecting switch. The Isolator, offered in 1931, was immediately accepted. As a device, it was simple and troublefree, but it also permitted adding circuits in a generating station without the necessity of enlarging or remodeling the building. Enclosed in insulation, it permits close spacing with safety.

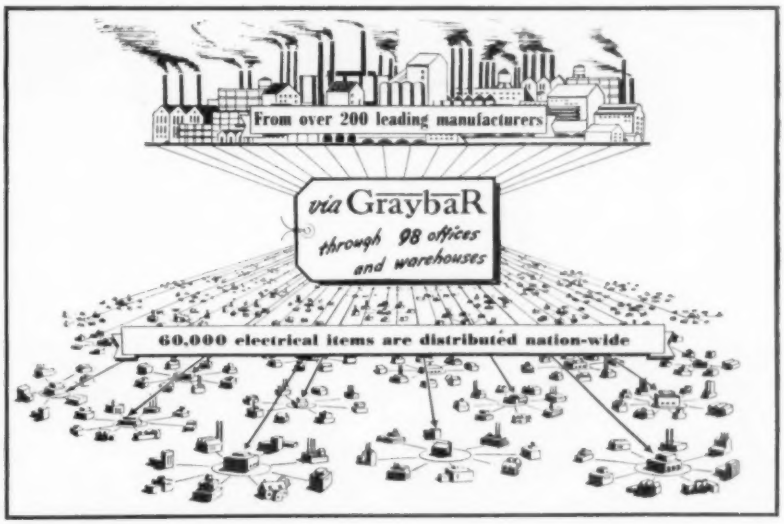
In illustration, 14 positions or cubicles were required for a switchboard in the municipal generating station at Fort Wayne, Ind. Blade-type switches would necessitate lengthening the building by 10 or 12 feet. Isolators met the requirements within the space available. They operate in any position—horizontal, vertical, on edge—permitting freedom in design of the switchboard. Besides its use in isolating circuits, the device is also used in sectionalizing buses.

Municipal light and power plants using this device include those at the cities of Springfield, Ill.; Atlantic and Muscatine, Ia.; Belleville and Jetmore, Kan.; Fergus Falls, Minn.; Cameron, Mo.; Knoxville and Memphis, Tenn., and Austin, Tex.

R. T. CALLOWAY, *Sales Manager, Electrical Engineers Equipment Co., Melrose Park, Ill.*

Good Ventilation and Temperature

For over 40 years we have produced ventilating, cooling, and heating equipment for rooms and buildings, including hundreds of those municipally-owned.


From over 200 leading manufacturers
via GraybaR
through 98 offices and warehouses
60,000 electrical items are distributed nation-wide

These products, usually installed by contractors, include self-cooled, direct-connected, motor-propeller exhaust fans, contrifugal fans, or blowers for ventilating systems using duct work; filter type Ilgairators to furnish a fresh supply of filtered air in offices, and steam and all-electric unit heaters, consisting of a heating coil with a fan behind, for municipal garages, police and fire stations. All are distributed nationally through electrical, plumbing, and heating and ventilating wholesalers, and through contractors everywhere.

We might mention one installation, now a dozen years old, that is both typical and of special interest because of its location in the President's hometown. It is Memorial Hall, the municipal auditorium of Independence, Mo. The ventilating system, designed by the Black & Veatch Engineering Co., Kansas City, using five 42-inch ILG self-cooled motor propeller fans, changes the 270,000 cubic feet of air of the main room every three minutes. The fans, located on the roof, draw fresh air in through every window, exhausting through 28 ceiling grilles, each 18 by 60 inches, into the attic and thence through the roof. This system has a decided cooling effect, most noticeable during the evening. Hon. Roger T. Sermon, Mayor then and Mayor now, wrote that "this ventilating system is entirely satisfactory."

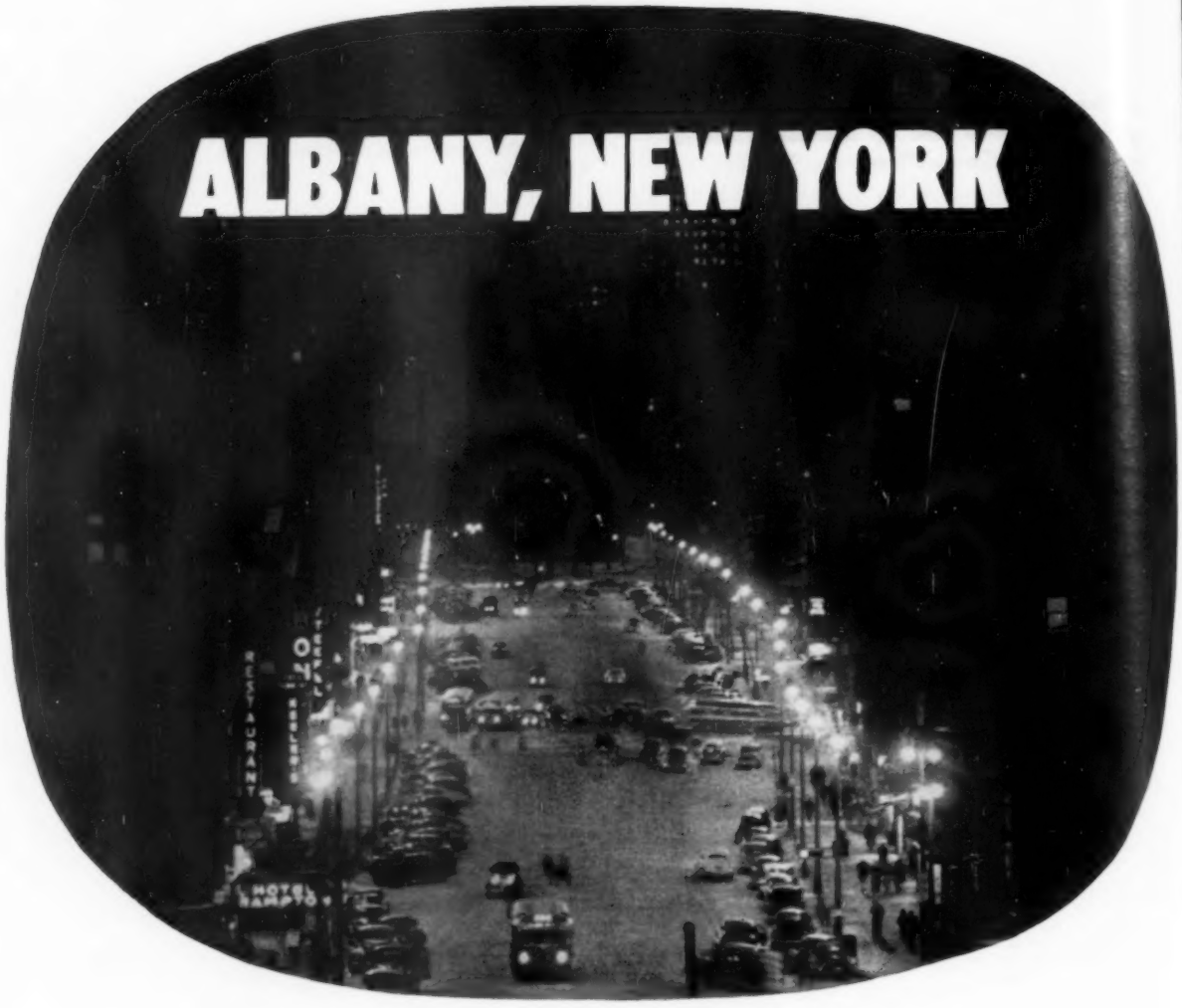
Our fans are blowing in almost every municipality. To take one region alone, the New Jersey metropolitan area, and to name a few locations at random, they are in the firehouses of Bogota and Highland Falls; the town hall of Linden; the municipal auditorium of Paramis; the photographic darkroom in City Hall and the airport control tower in Newark, and the Kearney sewage-treatment plant. Our heaters warm the fire houses, police headquarters, and the municipal hospital of Irvington; Bayonne's fire headquarters; the police headquarters of Paterson, and hundreds of other fire and police stations.

C. W. DEXTER, *ILG Electric Ventilating Co., Chicago 41, Ill.*

Temperature and Pressure

Mercoid controls and switches are providing many essential services in

ALBANY, NEW YORK



...a typical example of modern street lighting at its best

YOU'RE looking at an outdoor laboratory. Here, along lower State Street, Albany, new street lighting methods and equipment are being tried under tougher-than-usual conditions—to determine the best way of relighting the whole city.

State Street is one of Albany's main business arteries as well as a heavily traveled thoroughfare. Its width varies from 76 to 102 feet.

The new installation consists of 15,000-lumen multiple group-replacement filament lamps mounted in pairs, 30 feet high, parallel to the curb. The spacing of the tapered steel posts varies from 76 to 88 feet in opposite arrangement. Average illumination is 2.72 to 2.86 foot candles.

Said Mayor Erastus Corning, II, when the lights were turned on: "Good lighting makes the city a better place in which to live, a more desirable location for business and industry."

New York Power and Light Corporation, the progressive utility that worked with municipal officials to bring about these improvements, is a staunch believer in street lighting's benefits.

In Albany, as in other communities served by this organization, all due credit is given street lighting for its life-saving qualities. But its other benefits are stressed, too—the fact that it aids business, attracts new industries, increases real estate values and bolsters civic pride. Its noteworthy demonstration in Albany deserves careful study by all towns and cities.

FREE BULLETIN

If you would like additional interesting street lighting facts on still another progressive city, send for your copy of "The Indianapolis Story."

The Street and Traffic Safety Lighting Bureau, 155 East 44th St., New York 17, N.Y.

the operations of municipalities and utilities. Various types are available automatically to regulate electrically operated equipment in accordance with changes in pressure, temperature, fluid level, or mechanical movement.

Low-voltage types of thermostats, plain or with clock, maintain close differentials of temperatures of buildings and rooms. The line-voltage type is used in municipal garages and warehouses where heat is supplied by unit heaters. Where unit heaters are involved, it is advisable to install a reverse-acting temperature control wired in series with the theromstat to prevent blowers from operating on cold heaters.

In systems where oil-burners are used, various controls are required. For standard gun-type burners the Pyratherm, a primary safety control, works as a relay to operate the burner when the low-voltage thermostat calls for heat. It also shuts off the control in the event of a flame failure. Various types of limit controls are used to prevent over-pressure or over-temperature on steam or hot-water systems. A new type of oil-burner safety control which is gaining popularity is the Mercoid Visaflame, actuated by the light of the oil flame itself. New York State is specifying this control in a reconversion of the heating plant in the Hempstead, N. Y. armory.

One of the best insurance policies for steam boilers is a low-water cutoff which shuts off automatic heating equipment in the event of a drop of water level in the boiler. The value of this policy is likely to become nil unless the cutoff is flushed at regular intervals. This same type of control operates water-feed pumps to maintain the proper water level in the boiler, and is extensively used in municipal steam-electric plants.

In sewage-treatment plants, where explosive gases are found, explosive-proof cases can be provided for all controls as an additional safety factor.

Where close pressure or temperature applications are required, it is well to use the magnetic-switch type of control. These controls are limited as to electrical capacity, and it is advisable to operate them in the pilot circuit of a Mercoid relay. Where the control does not have to be too close, the tilting type of switch is used in the control. A good example of such controls is at the sewage pumping pits of the Village of Larchmont, where 16 of these controls regulate the water level in the pits. Since the installation was outdoors, a float-type control was impractical and pressure controls were used.

Many cities control the pressure within their water systems by means of our pressure controls. A typical use is controlling pumps to maintain pressure and, in turn, liquid levels in reservoirs and storage tanks. For alarm purposes, separate switches can be incorporated in the controls.

A. S. WIDDOWFIELD, *Sales Engineer, The Mercoid Corporation, Chicago 41, Ill.*

Jacks That Push, Pull, and Lift

If you are having any difficulty in lifting, lowering, leveling, pushing or moving anything, tell us about it. We manufacture some 200 sizes and types of jacks for general and special purposes. There are reel or drum jacks for warehouses and field service, as well as dual-purpose jacks that lift small reels and trucks.

There is a jack for pulling and for straightening poles, which makes digging or interruption of service unnecessary. A junior pole jack also tightens guy wire and pulls underground cables.

Double-leverage pipe-pushing-and-pulling jacks eliminate the necessity to reverse the complete pipe-pusher to pull pipe. The double levers and track insure accurate and economical pushing of pipe under paved streets and sidewalks. Tapered steel jaws surround the pipe to prevent crushing. Standard or short lengths are handled without buckling. Longer lengths, which save cutting, threading, and coupling costs, can also be handled easily.

J. B. TEMPLETON, *Templeton, Keney & Co., Chicago 44, Ill.*

Lighting Municipal Buildings

For all the advances in light knowledge and lamps, knowledge of interior lighting continues to be largely academic. One reason is that there are so few scientifically lighted areas where the public can learn the difference between the dispelling of darkness and the provision of working illumination. Fortunately an increasing number of manufacturers are producing lighting equipment, and are more closely defining the end purpose of their product—visibility accurately fitting the practical purpose of each room. The objectives of modern artificial lighting are an even distribution of light intensity all over the room, and the elimination of spheres of brightness contrasting with intervening dark areas. They can be achieved not only by the proper selection of modern lighting equipment, but also by the control of daylight and the use of appropriate colors for walls, ceilings, floors and furniture. Achievement of the above-mentioned objectives reduces eyestrain and increases comfort and efficiency.

In public buildings the tendency persists to make the fixtures ornamental rather than strictly functional. Yet the illumination, and not its source, is by far the most important element of a building in which work is performed. Over-all lighting by Wakefield is a service based on a complete line of lighting units.

T. D. WAKEFIELD, *Vice-President, The F. W. Wakefield Brass Co., Vermilion, Ohio.*

While the Graybar Electric Co. is only 23 years old, its acquisition of the 56-year-old Western Electric Supply Department from which it stemmed gives it 79 years of experience to offer its customers. "Graybar" was made up by combining the names of the founders of Western Electric: Elisha Gray and Enos Barton. In addition to complete service in distribution apparatus and electrical supplies, the company distributes General Electric luminaires, Union Metal Steel standards and Crouse-Hinds traffic signals.

National Clay Pipe Elects President

National Clay Pipe Mfrs., Inc., has elected to the presidency John M. Palmer, sales manager of the Lee Clay Product Co., Clearfield, Ky. He succeeds G. Lawrence Avery, of Sioux City, Iowa. D. M. Strickland, of Atlanta, Ga., and John D. Cook, of Chicago, Ill., were re-elected to their posts of vice-president and secretary - treasurer. F. S. Cresswell was reappointed manager of the national association with headquarters in Washington, D. C.

John M. Palmer

The Board of Directors for the new fiscal year includes W. E. Robinson, E. K. Sheffield, H. P. Wilhelmsen, G. Lawrence Avery, C. B. Beasley, Roy Lacy, A. C. Gladding, and Mr. Palmer.

Caterpillar Appointments

B. J. Grimm and J. F. Heschong, Jr., have been appointed Eastern Division parts manager and assistant parts manager respectively for the Caterpillar Tractor Co., Peoria, Ill.

B. J. Grimm **J. F. Heschong**

Mr. Grimm joined the company in 1943 and became assistant parts manager of the Eastern Division in 1947; Mr. Heschong has been a Caterpillar employee since 1936. His most recent position, before his promotion, was that of traveling supervisor for the Eastern Division, representing the company in contacts with Caterpillar distributors.

FERRONITE ORNAMENTAL STREET LIGHTING EQUIPMENT

KING Lighting Standards

•

Pendant type installed in Houston, Texas and other communities throughout the United States, available in heights up to 30 feet to light center.

PROMPT DELIVERY

and

BEST WORKMANSHIP

For detailed information contact the following:

General Electric, Schenectady, N. Y.

Graybar Electric Company
Chicago, Illinois

Line Material Company
Milwaukee, Wisc.

or contact the Plant at Sheffield, Alabama

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SHEFFIELD IRON & STEEL COMPANY

SUBSIDIARY OF BARIUM STEEL CORPORATION

Manufacturers of KING Lighting Standards and General Castings

SHEFFIELD, ALABAMA

Phone Sheffield 2245

Byron Jackson Merchandising Plan

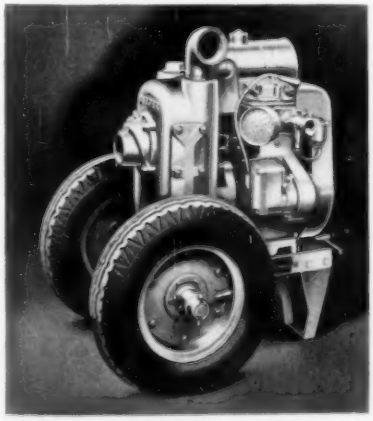
L. C. Kimball, sales manager of the Pump Division, demonstrates the Bilt-on pump.

The Pump Division of the Byron Jackson Co., Los Angeles 54, Calif., has a new merchandising plan for its line of Bilt-on pumps, general service pump-motor units designed with interchangeable basic parts.

With eight cases and motors and nine impellers plus a stock of small parts, the new plan makes it possible to assemble a Bilt-on pump that will handle capacities from 10 gpm to 600 gpm at heads up to 340 feet; 322 pump combinations are thus made available. The units are easy to assemble, since the Bilt-on has a single shaft common to both pump and motor. For certain capacities and heads, the impellers must be machined from 1 to 12 degrees, but no other work aside from assembly is required.

Jaeger's Portable 2-Inch High-Pressure Pump

The Model 2PAFH is a powerful gasoline-engine-driven unit, slightly more than 2 feet square, that answers the demand for a compact, completely self-contained and easily transported pumping unit that will take water from surface supply sources and deliver it at pressures adequate for fire protection, pressure washing, spraying weed-control mixtures, and filling and unloading tank trucks.



Weighing 150 pounds including pneumatic tires, mounting frame, and telescoping towing pole, at a 10-foot suction lift the pump has a range of volumes and pressures from 135 gallons per minute at 10 pounds' discharge pressure to 30 gpm at 60 pounds' discharge pressure, and a maximum shut-off pressure of 70 pounds.

One of the points stressed by the manufacturer is the Sure-Prime feature which results from two simultaneous but independent automatic actions. One is the rapid and positive priming action resulting from the pump design; the other is the "jet-priming" that consists of drawing air from the pump suction line to the impeller by entraining it in a high-velocity stream of water. The patented Jaeger cut-off feature, by automatically stopping recirculation once prime has been established, adds an appreciable percentage of capacity to the pump.

The pump, manufactured by the Jaeger Machine Co., Columbus 16, Ohio, is powered by a 5-hp-at-3,000-rpm Wisconsin air-cooled engine.

Courtesy of Colliers

NOSTRIP *makes better paving jobs, even with wet aggregate!*

No longer is it necessary to postpone bituminous pavement construction due to rainy weather. NOSTRIP, the all-year additive for tar and asphalt, will give you a better, more durable job under the most adverse conditions.

NOSTRIP enables you to coat wet aggregate with RC and MC cut-back asphalts, SC road oils, and liquid tars. Furthermore NOSTRIP greatly increases the resistance of any bituminous films to stripping in the presence of moisture, and reduces loss of stability of the finished pavement structure due to the detrimental action of water or water-vapor. Experience proves that NOSTRIP increases the durability and life of bituminous mixtures as measured by retained strength after long periods of exposure.

Count up the advantages of NOSTRIP:

1. Aggregate can be wet or dry in surface treatment, seal and tack-coating, cold plant-mix, and mixed-in-place construction.
2. No delays due to rainstorms.
3. Halves the blading and mixing time for road-mix.
4. Tested and approved by official research authorities.
5. Authorized for Federal Aid Roads.
6. Can be added in the field or at the refinery.

Demand a proven and approved anti-stripping additive with a record of many years' successful service in all parts of the world. Write us for specific information on how NOSTRIP can help you.

NOSTRIP DIVISION, MAGUIRE INDUSTRIES, Inc.

122 East 42nd Street, New York 17, N. Y.

PARKING METERS FOR YOUR CITY

should have these 9 features

LOW MAINTENANCE COST
Rhodemaster's rugged yet simple design keeps upkeep down.

ALL-WEATHER COIN SLOT
Rhodemaster's exclusive *weather-guard* slot gives trouble-free operation year-round and in all types of weather, too.

EASY-TO-READ DIALS
The large, easily read dial on every Rhodemaster speeds meter checking by the motorist and patrolman.

100% COLLECTION SYSTEM
The Rhodemaster's exclusive *sealed coin box* system assures the city 100% of the meter receipts.

DEPENDABLE TIMING MOVEMENT
The world-famous *Mark-Time* unit is incorporated into every Rhodemaster. Weather-sealed for durability and dependability.

VANDALISM PROTECTION
The *Magic Safety Link* of Rhodemaster guards against meter mechanism damage.

SLUG DETECTION
Rhodemaster's specially designed shatter-proof plastic *magnifying window* allows rapid detection of slugs.

FACTORY MAINTENANCE SERVICE
Rhodemaster's Factory Maintenance Service eliminates the need for clock repairmen on your staff.

HARMONIOUS DESIGN
of the Rhodemaster enhances the appearance of your city streets.

Only MARK·TIME **Rhodemaster** *gives your city all* **9**

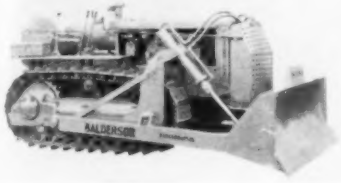
M. H. Rhodes, President

M. H. RHODES, INC., HARTFORD 6, CONNECTICUT

Balderson Dozers

The Balderson Mfg. Co., Wamego, Kans., announces hydraulic bulldozers custom-built for non-current Caterpillar track-type tractors built to fit without alteration models R2, D2, RD4, D4, D6, RD6, R5, 40, 35, RD7, D7, and Diesel 50 tractors.

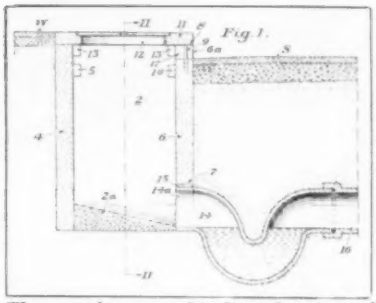
Straight-blade dozers now in production feature double-beveled reversible cutting edges, end bits on D6 and D7



sizes, Caterpillar-type trunnions on most models, hydraulic cylinders tractor-mounted, directly connected to blade, and a hydraulic unit built by the LaPlant-Choate Mfg. Co. Extra features available are a float-position valve, depth-regulating shoes, and an additional valve for combination dozer and scraper use. Bulldozers for the D2, D4, and D6 tractors are also available.

V-type and reversible snowplows may be obtained as conversion units for both old and new Caterpillar track-type tractors equipped with LaPlant-Choate, Bros, LeTourneau, Caterpillar, or Balderson bulldozers.

Precast Catch Basin



The numbers on this line drawing of the Hart Precast catch basin refer to details on the working design drawing.

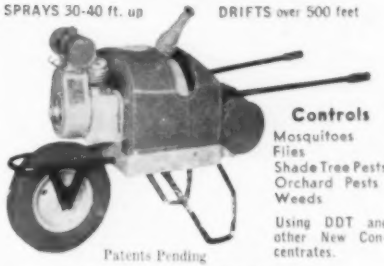
A Precast catch basin with a U-shaped trap outside the basin is the substance of a design by John J. Hart, construction engineer, 5744 Kentucky Ave., Pittsburgh, Pa.

The design, recently patented, eliminates the usual body of stagnant water found in most catch basins with the muck and grit that must be cleaned out periodically in standard basins. The prefabricated design makes it possible for cranes and hoists to place the basin walls quickly. The U-shaped trap should be preformed and built out of tile or concrete.

Mr. Hart's design is aimed at a basin and trap that are easily cleaned, and if possible, self-cleaning. A high-pressure hose will clear the trap in most instances, he feels.

Now EVERYONE Can Use MIST SPRAYING!

SPRAYS 30-40 ft. up DRIFTS over 500 feet



Controls
Mosquitoes
Flies
Shade Tree Pests
Orchard Pests
Weeds

Using DDT and other New Concentrates.

Patents Pending

Guptill WHIRLWIND Wheelbarrow Sprayer

This is the ideal spray unit for small acreages. Provides complete insect and pest control by mist blowing. Won't harm the most delicate shrubbery on estates. Permits small orchardists to do their own spraying. Ideal for estates, orchards, nurseries, vineyards, farms, golf courses, truck farms, woodlands, cemeteries, etc. Can be easily converted to skids for use on tractors and trucks. Boom attachment optional for spraying directly to crops. Prompt delivery.

- Fingertip Controls
- 3-Stage Blower
- Improved Nozzle
- Method approved by U.S.D.A.
- Light Weight

PRICE $395 f.o.b. Cambridge

Write for Bulletin
DISTRIBUTORS WANTED

FITZHENRY-GUPTILL CO.
135 First Street Cambridge, Mass.

NETCO
CATCH BASIN CLEANER

Can be mounted on any short wheel-base truck having at least 8 ft. in back of cab. You can purchase unit separately and mount on your own chassis . . . The Netco Unit can be removed from truck in 30 minutes, permitting use of truck for other purposes. The Netco Bucket closes pneumatically assuring positive and maximum digging efficiency . . . The Bucket has full 1½ cu. ft. capacity with no chains or linkage to obstruct operation.

The Netco Catch Basin Cleaner is faster, safer and more economical to operate than any other method used to remove debris from catch basins.

Send for illustrated folder.

NETCO DIVISION CLARK-WILCOX COMPANY

118 Western Avenue, Boston 34, Mass.

For Sale

Two (2) Price Rathbun Oil Engines, 150 hp., 227 rpm., rotation clockwise, Engine Nos. 2104 and 2097, with one lot spare parts.

One (1) Lansing 2776X Batch Concrete Mixer on 2-wheel trailer, solid rubber tires, with Lauson engine.

One (1) Addressograph Feeder, Model 192, 1/6 hp. Delco Motor, 110-volt, 60-cycle.

One (1) Dipper and Stick with 3/4-yd. Bucket for Koehring Model 302 Shovel, length 13 ft.

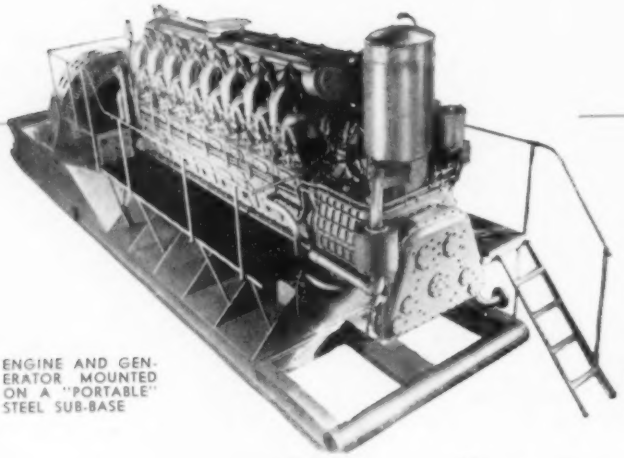
Any reasonable offer will be considered.

For Details, Write:

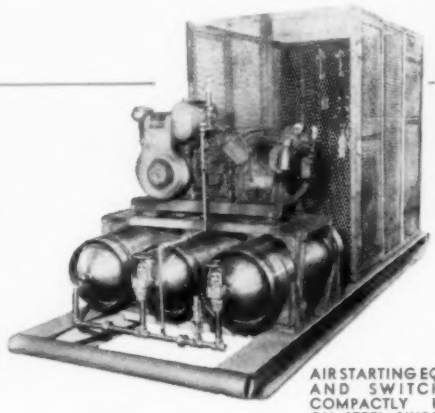
PURCHASING AGENT
City of Corpus Christi, Texas

PORTABLE DIESEL PLANTS

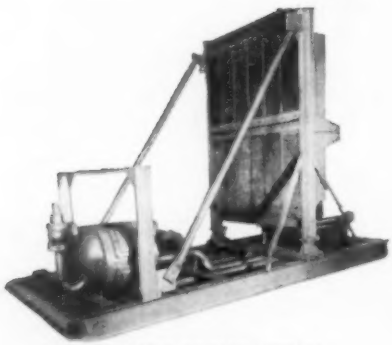
OFFERED FOR QUICK DELIVERY



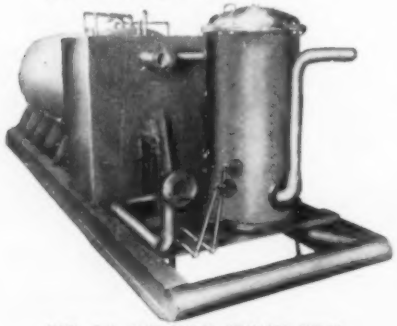
ENGINE AND GENERATOR MOUNTED ON A "PORTABLE" STEEL SUB-BASE



AIR STARTING EQUIPMENT AND SWITCHBOARD COMPACTLY MOUNTED ON STEEL SKIDS



PART OF ENGINE COOLING SYSTEM—A SKID-MOUNTED RADIATOR



FUEL OIL DAY TANK, ENGINE SUMP TANK AND FILTER, MOUNTED ON STEEL SKIDS

IDEAL FOR HEAVY DUTY SERVICE WHERE POWER IS NEEDED FAST

A 1250 KVA GENERAL MOTORS GENERATOR SET, Model 16-278A with ***NEW*** ELECTRIC MACHINERY MANUFACTURING COMPANY ALTERNATOR, 3 phase, 60 cycle, 2300 volts mounted on a fully portable, stress-relieved welded steel sub-base. All accessories are compactly mounted on steel skids to give the entire installation complete portability. The unit is designed so that it is a simple matter to erect anywhere and place in operation immediately.

900 KVA GENERAL MOTORS PORTABLE UNITS are also available. Investigate the possibilities of these compact and versatile power plants. Write for complete information today.

- Diesel Power Plants available from 15 to 1,000 Kw.

Engineered AGSCO DIESEL POWER

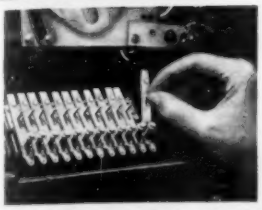
A. G. SCHOONMAKER *Company, Inc.*

ESTABLISHED 1898

Diesel Engines • Power Machinery

50 CHURCH STREET, NEW YORK 7, N. Y. PHONE DIgby 9-4350

New Traffic Controller



Top: Opening the dial door and inserting dial key. Middle: Replacing a contact finger. Bottom: Changing the timing cycle.

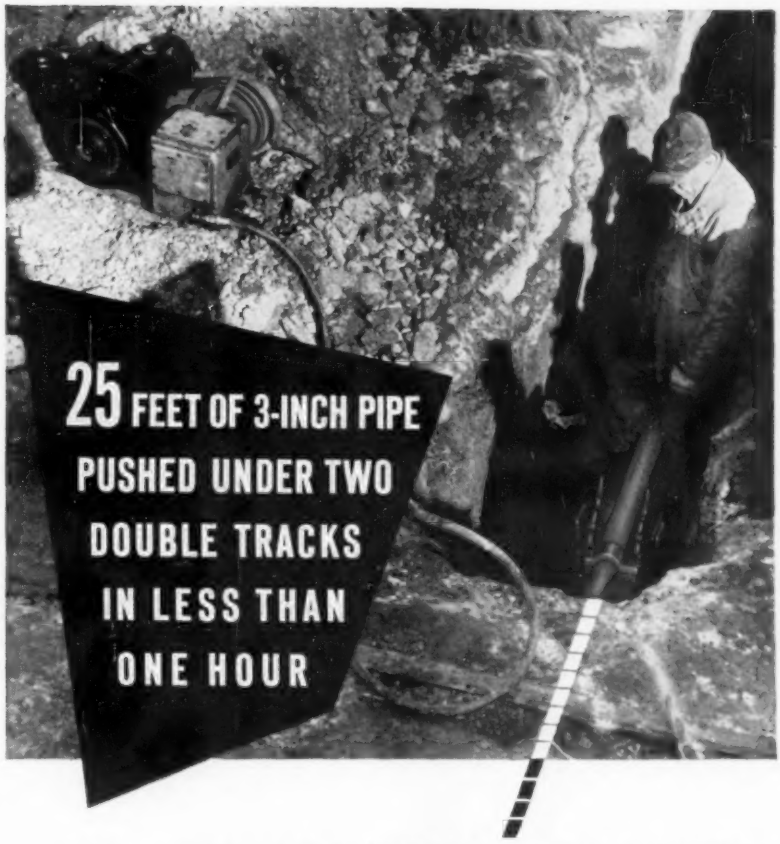
A new traffic controller for use at either isolated intersections or in an interconnected system is offered by The Marbelite Co., Inc., 27 Warren St., New York 7. Up to 18 timing intervals are obtained by changing the cam setting. Accessories such as automatic flashing, all red fire cycle, hand operations, etc., can easily be added. The design was worked out with the needs of the serviceman in mind. Hinged mounting makes removal easy. Dial keys are easily inserted and are self-locking. Contact fingers are quickly replaced. To change the timing cycle, replace the numbered timing gear and set the indicator on the corresponding dial speed. An 8-page illustrated booklet describes construction and operations.

Allis-Chalmers Appointments

Richard M. Stone E. G. Kullman

Richard M. Stone has been appointed industrial sales manager for the Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. E. G. Kullman has been appointed assistant general sales manager.

Both Mr. Stone and Mr. Kullman joined Allis-Chalmers 20 years ago.



... with a GREENLEE HYDRAULIC PIPE PUSHER

"We made this fast, under-railway installation during a near-zero spell," reports Harris-McBurney Co. of Jackson, Michigan. "And without the GREENLEE Pusher and Power Pump we would not have otherwise even attempted the job.

"During the past three years we have used the GREENLEE Pusher to install many thousands of feet of pipe and telephone cable conduit under airport runways, streets, railways, and highways.

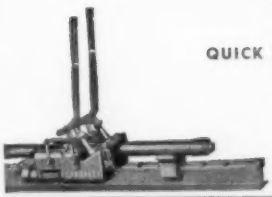
"By no means could these jobs have been done as efficiently, quickly, or at as low cost as with a GREENLEE. Ours paid for itself on the first job."

You, too, can make big time and labor savings with a GREENLEE which *pushes* pipe under obstructions. Eliminates extensive ditching since just a short trench accommodates the Pusher —no tearing up, backfilling, tamping, tunneling, repaving.

Get facts today on this timesaving, efficient tool. Write Greenlee Tool Co., Division of Greenlee Bros. & Co., **2026** Columbia Avenue, Rockford, Illinois, U. S. A.

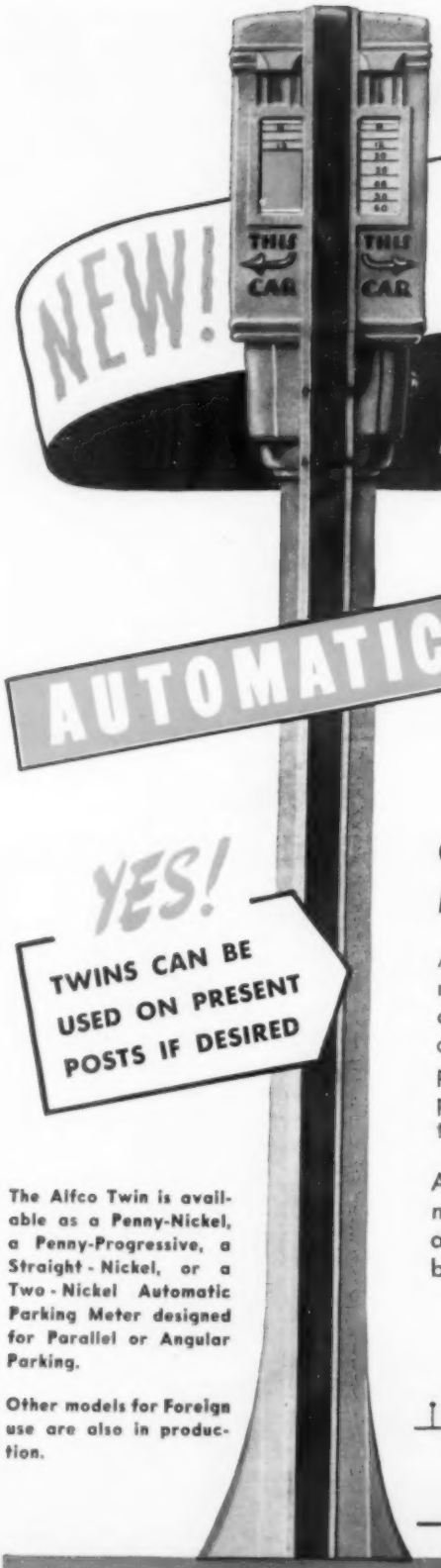
TOOLS FOR CRAFTSMEN

GREENLEE



QUICK FACTS ABOUT THE GREENLEE HYDRAULIC PIPE PUSHER

Easy — one or two men can easily operate on any job. *Portable* — compact, easy to carry to job and set up. *Fast* — operates at six different speeds. *Two models* — (1) for pipe up to 4-inch; (2) for larger pipe, drainage ducts, concrete sewer pipe. Do the job easier, quicker with a GREENLEE.



NEW!

INCREASED EFFICIENCY at about 50% LESS COST . . .

WITH THE

ALFCO TWIN

AUTOMATIC PARKING METER

ONE TWIN SERVES TWO SPACES

YES!

TWINS CAN BE USED ON PRESENT POSTS IF DESIRED

Costs About 50% LESS to Buy, and Is 50% MORE PROFITABLE to Own!

Alfco Twin Automatic Meters are the greatest innovation in metered parking control because one Twin does the work of two ordinary meters at about one-half the cost of initial purchase and one-half the cost of maintenance, yet serve just as many parking spaces. They enhance the good looks of city streets and parking areas. They pay for themselves in about one-half the time required to pay for the ordinary meter which parks one car.

Alfco Twin Automatic Parking Meters are ideally geared to meet modern traffic needs. They help speed up parking for both arriving and departing drivers. They help eliminate traffic blocks by allowing all unoccupied space for easy entry and exit.

Orders are now being accepted. Write for detailed information.

The Alfco Twin is available as a Penny-Nickel, a Penny-Progressive, a Straight-Nickel, or a Two-Nickel Automatic Parking Meter designed for Parallel or Angular Parking.

Other models for Foreign use are also in production.

Old method of a separate meter for each single space.

New way of ONE Alfco Twin Meter for every TWO parking spaces.

INTERNATIONAL METERS, INC.

Executive Offices: 100 East LaFrance Street, Elmira, New York
General Sales Office: 41 E. 42nd Street, New York 17, N.Y.

SUBSIDIARY OF AMERICAN-LAFRANCE-FOAMITE Corporation
ELMIRA NEW YORK U.S.A.

ALFCO

Pulverizer Speeds Road and Street Stabilization

Designed to prepare economically old oil mats and asphalt and macadam pavements for reuse in the reconstruction of streets, the Wood Preparizer is an extra-heavy-duty scarifier and pulverizer with hydraulic jack mounting which gives it perfect control of the scarifying and pulverizing depth so that the old mats can be peeled off the base and pulverized without disturbing the base material.

Other uses for this machine, manufactured by the Wood Mfg. Co., 6900 Tujunga Ave., North Hollywood, Calif., include the pulverization of hard-baked adobes and sand clays used in soil-cement and emulsified-asphalt stabilization, as well as the cement gravels, decomposed material, and caliches used in slurry base courses. It can be used as a material blender, an aerator, or a drier.

All-Wheel-Drive Conversions For Ford Models

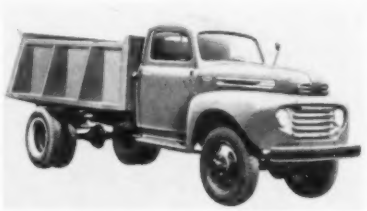
The Marmon-Herrington Co., Inc., Indianapolis 7, Ind., announces all-wheel-drive conversions for the new 1948 Ford models. These conversions place driving power in the front wheels as well as the rear, increasing the tractive power and enabling the vehicles to negotiate deep mud, sand, snow or hills.

Although the emphasis is on trucks to enable them to do work too difficult for vehicles of conventional drive, Marmon-Herrington will convert all standard 1948 models to all-wheel-drive: station wagons to four-wheel drive and larger truck models to either four-wheel or six-wheel drive.

The following are the major changes made by Marmon-Herrington in converting the cars:

The original front-axle assembly is removed and a new front-driving axle is installed which has standard Ford differential, ring, and pinion gears, and is equipped with specially designed constant-velocity universal-joint steering ends.

On units smaller than one ton a transfer case is installed for transmitting power to the front-axle propeller shaft. On units of one ton and over a new two-speed auxiliary transmission of Marmon-Herrington design is installed, providing exceptionally low final reduction.



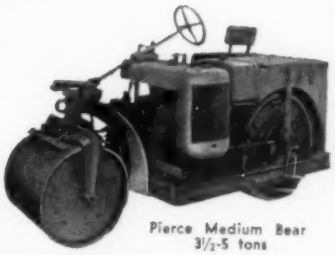
A 1948 Ford truck equipped with the all-wheel-drive conversion.

Necessary changes are made in steering assembly and hydraulic brake connections.

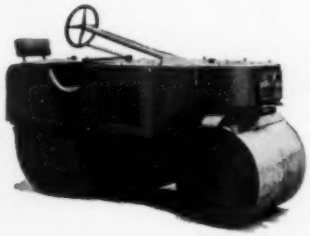
On six-wheel-drive models the frame is lengthened and reinforced and a third driving axle and wheel assembly are installed.

A Roller For Every Job

Sturdy, heavy-duty rollers, engineered to stand up under the toughest conditions. Pierce-Bear Tandem Rollers are powered by economical Allis-Chalmers 4-cylinder industrial type gasoline engines. Variable weights, from 3½ to 5 tons with built-in water tanks for ballast and wet rolling.



Pierce Medium Bear
3½-5 tons



Pierce Baby Bear
2½-3 tons

The new 2½-3-ton Pierce Baby Bear is designed for close-in work and small area maintenance. It works against a curb up to 25 inches high and within 1½ inches of a higher wall or building. Final drive is within the rear roll. Use Pierce-Bear Tandem Rollers for all-around performance. Write for folder.

Pierce-Bear Rollers
Lewis Manufacturing Co.
415 Hoefgen Ave.—San Antonio 6, Tex.

ZONEMARK
THE INTERNATIONAL TRAFFIC PAINT

Zonemark expedites traffic at one of the busiest intersections in the world—5th Ave. and 42nd St., N. Y. C.

5 yardsticks to measure the value of "ZONEMARK"

1 QUICK DRYING
May be driven over without pickup in 15 to 30 minutes according to weather conditions.

2 WEARS LONGER—BY TEST
Your own records will prove that Zonemark outwears other paints.

3 GOES FARTHER—BY TEST
Impartial tests prove Zonemark has 10% to 30% greater coverage.

4 COVERS WITH ONE COAT
One coat covers the darkest surface with a clear-cut opaque film.

5 DAY AND NIGHT VISIBILITY
Correct surface finish assures greatest visibility by night or day.

•

no other traffic paint has ALL these advantages

•

Available in
White • Medium Yellow
Orange • Bright Red • Black

ZONEMARK
THE INTERNATIONAL TRAFFIC PAINT
Made Exclusively By
HANLINE BROS.
Paint Makers
BALTIMORE 30, MARYLAND

U. S. Pipe & Foundry Board Elections

N. F. S. Russell

Donald Armstrong

N. F. S. Russell, president of the United States Pipe and Foundry Co., Burlington, N. J., has been elected chairman of the board, and General Donald Armstrong, executive vice-president, has been elected president.

During the presidency of Mr. Russell, who relinquishes active direction of the affairs of the company after serving as its president for 25 years, the company bought a substantial interest in the Sloss-Sheffield Steel and Iron Co., producers of pig ron.

General Armstrong was assistant chairman of the executive committee of the American Standards Association before coming to U. S. Pipe and Foundry in 1947.

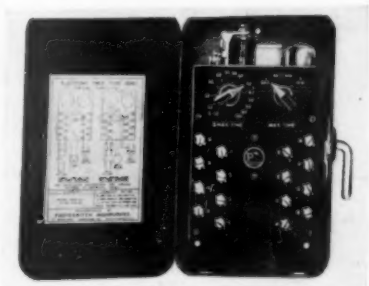
The Mighty Midget Pavement Breaker

The R. P. B. Corp., 2751 E. 11th St., Los Angeles, Calif., has introduced a new paving breaker designed to do the work of five ordinary 85-pound hand-held machines, with only one 105-cfm compressor. The Mighty Midget breaks concrete and other types of pavement up to 10 inches thick and tamps backfill. It has 5,000 foot-pounds of energy in its striking head; in its initial tests it broke 900 square feet of 4-inch concrete pavement per hour.

The breaker, which operates at its rated capacity of 55 to 60 blows per minute, is mounted on a tricycle running gear and is driven by an air motor geared to its wheels which can move the machine up a 15-degree incline.

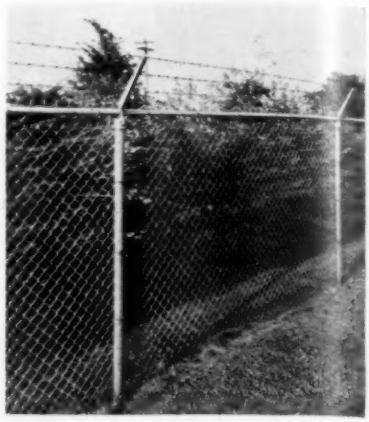
Measuring 4 feet 8 inches in length, 4½ feet in width, and 5 feet in height, the Mighty Midget has a 3-inch piston rod, a 5-inch cylinder bore, a 125-pound hammer head, and an all-welded frame. The length of the stroke is 24 inches, and the machine will reach below the ground surface about 30 inches. Seven types of standard junior paving-breaker tools fit the Mighty Midget, and special tools for special applications will be furnished by the manufacturer upon request.

New Interval Timer



A new electronic timer, having a range of from .03 seconds to four minutes, is recommended for the control of chemical feeders, etc. It may be wired to provide interval timing, delayed action, automatic repeat, and programming as well as many variations of these. It is also recommended when long life and repeat cycle accuracy are the guiding specifications. Send for Bulletin PC478 from Photoswitch Incorporated, 77 Broadway, Cambridge 42, Mass.

Protective Fencing



Storm-water storage and the recharge basin at Garden City, N. Y., part of the storm-water drainage system of Nassau County, is protected by Realock fence. The fence, 3,300 feet by 7 feet high of 2-inch mesh and No. 9 gauge, including barbed wire, was installed in 1938. In addition to round posts, there is H-type construction available without barbed wire, in heights of 4 to 12 feet. With barbed wire the available heights are 6 to 12 feet and, for special requirements, up to 30 feet or more. This type of fence is described in Catalog 132-F of Wickwire Spencer Steel Division of The Colorado Fuel and Iron Corp., 361 Delaware Ave., Buffalo 2, N. Y.

Fog Machines Launch War on Buenos Aires Insects

President Peron of Argentina and other government officials stand at the right watching an official demonstration of TIFA, the insecticidal fog generator made by Todd Shipyards Corp., 81-16 45th Ave., Elmhurst, Queens, N. Y. Three trucks bearing the fog machines proceed down a main thoroughfare in Buenos Aires. The leading truck is rigged with an announcer's booth from which the populace was advised of the program of war on insects. On the front cover appears another view of the TIFA machine fogging a residential area in connection with mosquito control in Chatham, N. J.

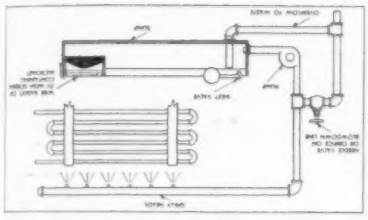
Design Trucks for Fuel Economy, Says Rodgers

Ted V. Rodgers, chairman of the board of the American Trucking Associations, Inc., Washington 6, D. C., told the Detroit Section of the Society of Automotive Engineers there still are some deficiencies in modern motor trucks, although truck design in general is ahead of highway design and construction.

Truck power plants are approaching the needs of present gross loads, but grade performance still is not fully adequate. Size and weight limits in the western states are much more liberal than those in other parts of the country, and loads allowed in the West now are practical almost anywhere in the country.

Abundant supplies of petroleum no longer exist in this country and the cost of motor fuel will continue to be high; hence the interest in engine fuel economy.

Diesel Engine Scale-Free Coolers



A simple wire basket is all that is required to feed chemicals in this cooling system at the North Branch, Minn., diesel electric plant.

The problem at the diesel-powered municipal electric plant of North Branch, Minn., was scale in the water-cooling system. L. E. Madsen, superintendent, had to use the hard, 270-ppm city water for make-up. The scale was upward of ⅜ inch thick, and although mechanical and acid cleaning helped, they proved at best to be a temporary solution.

The answer, Mr. Madsen reports, proved to be a slowly soluble glassy phosphate, automatically fed to the water in a container of wire mesh submerged in the cooler sump. This chemical, known as Micromet, proved to be so effective in inhibiting scale formation that the planned addition of more cooling capacity last summer—an expenditure which the municipal light and power commission had believed unavoidable—was found to be unnecessary.

A basket, or container, made of wire mesh was submerged a few inches below the water level in the sump of the cooler. The Micromet was placed in the basket, and the chemical slowly dissolved to maintain the necessary concentration required to hold the scale-forming salts in solution in the cooling water.

The Micromet dissolves at a constant rate of approximately 25% per month, regardless of how much water is passed through it or over it. Thus, for every pound of Micromet required to treat a month's supply of water, the feeder (in this case the wire-mesh container) is initially charged with 4 pounds of the chemical—of which 1 pound will dissolve and be introduced into the circulating water during the month.

To maintain the treatment, it is necessary to replenish the Micromet only once a month. For scale prevention it is common practice to employ a 1-pound initial charge of Micromet for each 200 gallons of make-up water used per day, with a monthly quarter-pound of initial charge.

The action of the chemical, according to the manufacturer—Calgon, Inc., of Pittsburgh, Pa.—is one of keeping scale-forming salts in solution, so that they do not precipitate and deposit as scale on cooler tubes or other parts of the system. The same chemical, according to Calgon engineers, is effective for corrosion control in cooling systems, air washers and humidifiers, and refrigerating systems, where the water used is soft.

The effectiveness of this chemical in inhibiting corrosion lies in its ability to provide a protective film of Micromet on the surface of the metal. The protective film is so extremely thin that it is practically invisible and does not interfere with heat transfer.

GIANTS in the world of Water Pumping

Peerless Hydro-Foil MIXED FLOW Pumps

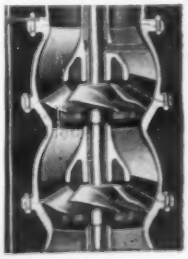
CAPACITIES: UP TO 220,000 G.P.M.
LIFTS: 2 to 60 FEET

Rapidly Move and Remove Vast Volumes of Water Against Low and Medium Heads

Highly successful in the efficient handling of large volumes of water, Peerless Mixed Flow Pumps are being applied to process work, condenser service, liquor and chemical circulation and a variety of industrial services where pumping is desired from open pits, sumps, and surface water sources, such as lakes, rivers, etc. and for large scale dewatering operations.

Peerless has proved the effectiveness of incorporating aero-dynamic streamlining principles to large-volume water lifting, resulting in new conceptions of high efficiences and lower overall pumping and maintenance costs.

Water turbulence accompanying the usual propeller and vane construction, and normally resulting in excess wear, inefficiency and loss of power, are reduced to the minimum in the Peerless Mixed Flow design.



Cutaway view of Mixed Flow multi-stage pump impeller and bowl construction revealing high-efficiency impellers utilized for more economical water lift.

Peerless Propeller Type Pumps

Peerless pumps, embodying the Hydro-Foil principle, are also available in the propeller type and are capable of handling identical capacities of the Peerless Mixed Flow pump. Request Bulletin B-148 completely describing the design, construction and application data of these two outstanding types of Peerless Pumps, for large-volume water pumping.

fmc PEERLESS PUMPS

PEERLESS PUMPS

PEERLESS PUMP DIV. FOOD MACHINERY CORP.
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The Sensational New

FEATHERWEIGHT

MODEL 87

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PIPE LOCATOR

Goldak Invites Comparison

- Shows - not approximate but *EXACT* location of buried pipes, mains, services, gates, tees, ells, stubs, etc.
- Completely new electronic circuit provides an incomparably strong positive location signal.
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- Operating simplicity. A one-man instrument.
- Featherweight - only 11 lbs. complete.
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SELF-CLOSING ANTI-FREEZING HYDRANT

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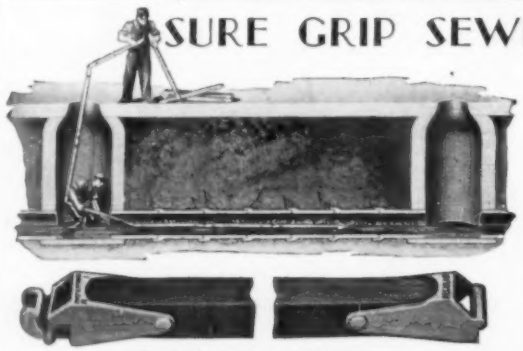
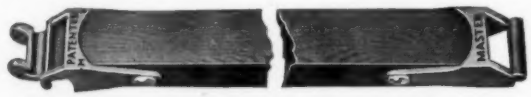
SURE GRIP SEWER RODS and ACCESSORIES



The REGULAR, a light rod,
Fir stock 1¼ x 1¼ inch square.

are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.



The MASTER, a heavy duty rod,
Fir stock 1½ x 1½ inch square.

Write for catalog on complete line of sewer cleaning equipment.

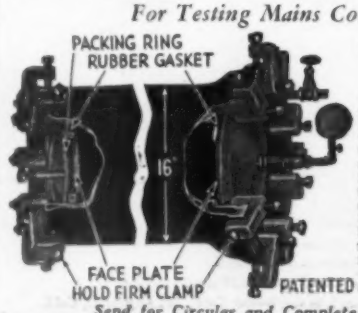
EXPANDING SEWER MACHINE CO.

NAPPANEE, IND.

"HOLD FIRM"

A NEW TEST PLUG

For Testing Mains Conveying



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OIL AIR

For testing cast iron, steel, transite, soil and concrete pipe lines, without the necessity of valves; test pipe as you lay them; eliminate open trench and hazards; special for testing reclaimed pipe, valves and fittings. Installed by any unskilled laborer; withstands 300 lbs. hydrostatic pressure, light in weight; same clamps fit many sizes of pipe. Made in all sizes. Used by the City of Chicago, contractors and municipalities.

Send for Circular and Complete Information

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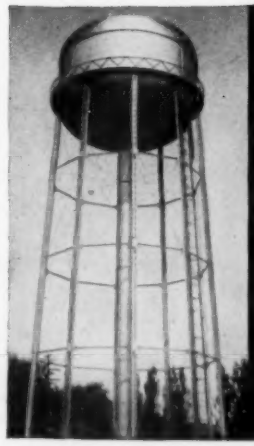

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Both Front and Back Of Tractor Utilized

The Profit loader and rear-mounted earth auger on the Case VAI industrial tractor illustrated here are representative of the Construction Products Corporation Profit system of companion tools designed for construction applications with the Case VAI.

Versatility for a variety of jobs is accomplished with tools mounted at

both the front and rear of the tractor and operated hydraulically.

The Profit loader has a dumping height of 8 feet 6 inches. Its capacity is ⅜ yard at truck level and ½ yard heaped. The standard bucket is interchangeable with a fork lift, angle dozer, coal bucket, wide bucket, and crane hook.

All rear-mounted companion tools in the CPC Profit system are operated from a common rear-equipment hitch which provides down-pressure to operate the Profit scoop and scarifier, earth auger, angle grader, and compacting roller. The manufacturers are the Construction Products Corp., 4345 East Imperial Highway, Lynwood, Calif.

Why So Many Oils and Greases?

In a central municipal garage or on a city construction project using a variety of automotive equipment, it is often desirable that the manufacturers' recommendations for lubricants be consolidated and simplified. Otherwise, to meet the specialized recommendations shown on their charts for a variety of equipment (such as rock drills, pumps, lighting sets, concrete mixers, scrapers, tractors, pavers, and excavating machines, to mention a few), would require more lubricants than could be conveniently handled. For example, to meet the specialized lubrication recommendations for the above equipment on one paving job there would be required five grades of motor oil, four grades of gear oil, three grades of gear and cable lubricant, six greases, a track-roll lubricant, a cylinder oil and hydraulic oil.

How did this come about? The oil companies, in order to serve industry in general, have made available hundreds of different types and grades of lubricants and thousands of different brands. Of these, a construction machinery manufacturer, from his past experience, will select certain ones for his machine. Another manufacturer, who has had a little different experience, will select an entirely different set of lubricants. The result is that, in order to meet each manufacturer's individual recommendations, an oil company would have to supply more products than could be handled practically in the field. In the specific case mentioned, 21 different oils and greases would have to be supplied.

The 21 lubricants can be cut down to perhaps seven, which experience has proved are all that are usually necessary. For a garage or maintenance man to do it is putting responsibility where its does not belong. *The Texaco Simplified Lubrication Plan for Large Construction Projects* fills this need.

The Texas Co., 135 E. 42nd St., New York 17, N. Y., states that its representative will assist in putting this plan in operation by:

Determining the quantity of lubricants required so that inventories may be kept low and adequate stocks still maintained.

Arranging for quick deliveries.

Checking over grease guns.

Determining if any special products are required for certain mechanisms.

This Mower does what it claims!

6 MODELS

#3 Model shown—6 hp., 4-cycle Briggs & Stratton motors. Cuts 8 to 9 acres per day.

Standard also has these attachments: leaf pulverizer, cultivator, roller, riding sulky, snow plow.

Standard's 15 years of experience have proven that the rotary disc type of cutting is the most economical way of lawn control. No wheels are on the uncut grass. Cuts any growth.

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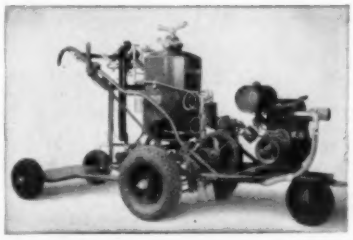
STANDARD MANUFACTURING SALES COMPANY • LEBANON INDIANA

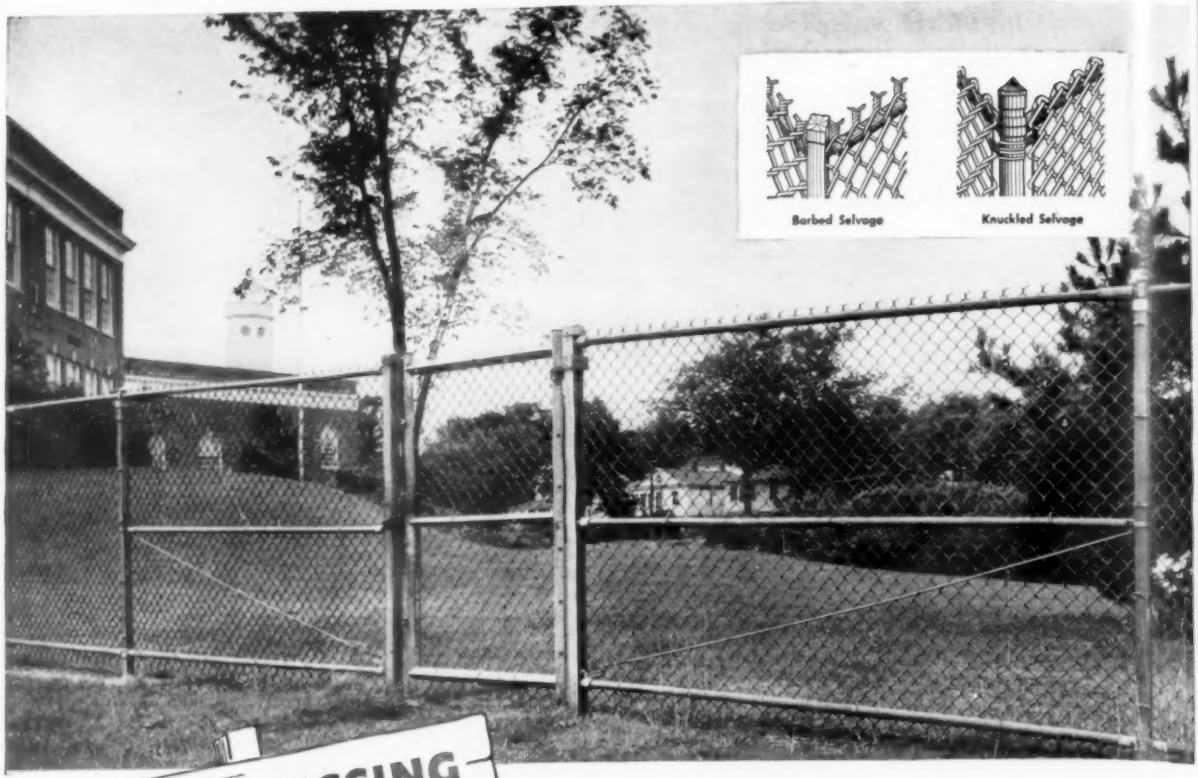


All-Purpose Striper
Solves Zone-Marking Problem

Self-propelled and completely self-contained, designed to meet the needs of city and town street departments, airports and highways, for accurate high-speed striping.

Clean-cut, attractive lines are assured with K-C Air Curtains. Air actuated traction up to 5 mph with a trailer for the operator. Truck-mounted and other models are available for all requirements. Write for illustrated folder.

KELLY-CRESWELL CO., Xenia, Ohio



...THEY CAN SIDESTEP A SIGN BUT NOT A REALOCK FENCE

Whether you require protection against trespassing or the more serious offenses of vandalism, arson and theft—a tamper-proof Realock* Fence provides the necessary security, plus many other advantages.

Realock Fence permits full use of property. It's easy to install, moderate in cost and virtually maintenance-free. For parks, playgrounds and gardens, a low Realock Fence with smooth knuckled selvage (ends bent back along the weave) insures a satisfactory enclosure. Wider Realock Fences with tamper-proof fittings and barbed wire topping assure maximum protection around power plants, schools, reservoirs, airports, hospitals, factories, disposal plants and similar types of property.

Only the finest selected metals are used in making Realock Fence—which is further protected by hot galvanizing. Fittings are of malleable iron and pressed steel, heavily galvanized, or aluminum.

FREE CATALOG—FREE ESTIMATES—Without obligation, we will be happy to have the Realock representative in your territory measure your property, work out details for proper protection and submit estimates for fence material ready for erection or covering complete installation by trained crews. For free catalog and further particulars, write to our nearest office.

*Realock is a trade-name identifying the Chain Link Fence made by The Colorado Fuel and Iron Corp. and subsidiaries.

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The California Wire Cloth Corp.
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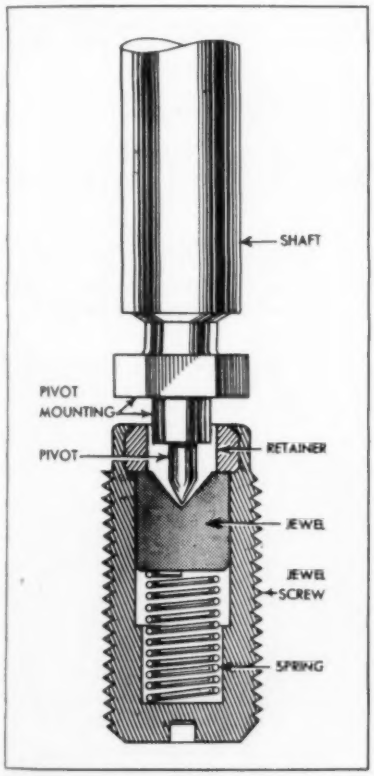
Ryerson Announces Sales Appointments

W. E. Falberg, head of special steel sales at the Cleveland, Ohio, steel-service plant of Joseph T. Ryerson & Son, Inc., Chicago 80, Ill., has been appointed manager of alloy and stainless sales at the company's plant in Chicago, Ill. E. H. Bodenmann, formerly a sales representative of the stainless steel department of the Chicago plant, has been transferred to Cleveland, succeeding Falberg as manager of alloy and stainless sales.

New Line of Long-Scale Switchboard Instruments

A new line of long-scale switchboard instruments, manufactured with bearings with spring-mounted jewels to protect the pivots even under conditions of abnormal shock, is on the market from General Electric's Meter and Instrument Divisions, Schenectady 5, N. Y.

Designed for general switchboard use by electric utilities and other power-using plants, the Type AB-15 (a.c.) and DB-15 (d.c.) have scales 7.1 inches long spanning 250° about the center; visibility is good.



The bearing for the shaft and spring-mounted jewel. If, because of shock, the pressure of the pivot on the jewel is appreciably higher than normal, the jewel recedes into the screw. Before the jewel hits bottom, the shoulder on the end of the shaft strikes the top of the jewel screw and takes the shock, protecting the jewel and pivot.

Other features are 1% of full-scale accuracy, anti-parallax scale, non-glare glass, thorough shielding from stray fields, external zero adjusters when required, and high overload characteristics.

Hand-Power Cutting Tool

In announcing its redesigned line of Porter hand-power cutters featuring 15 improvements, H. K. Porter, Inc., Somerville, Mass., stresses a new degree of ease, strength, safety, and performance in the cutting of bolts, rods, wire, cable, chain, bars, and metal of all kinds.

Of the improvements, the following

The Porter hand-power cutter.

are cited as being of particular interest to users: curved toe-in handles which decrease the armspread and wrist bend, making an easier and stronger pull; broad, rounded palm-fit grip which reduces fatigue; no protruding screws or bolts; metal safety handle stop; 30% greater tool strength in sections and handles, and jaws that are plainly marked to show capacity and type of metal safety cut.

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BUILT LIKE A FIRE ENGINE

CARRIES COMPLETE EQUIPMENT FOR RODDING SEWERS

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McWANE

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- Easy to Lay

"Just Screw 'Em Together"

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Birmingham 2, Ala.

McWANE 2" CAST IRON PIPE

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Stewart 3TH Non-Climbable Chain Link Wire Fence assures the utmost in protection for reservoirs and all other public property. Stewart products for protective purposes also include: Wire Window Guards, Wire Mesh Partitions and Steel Folding Gates. When writing for information please mention products in which you are especially interested.

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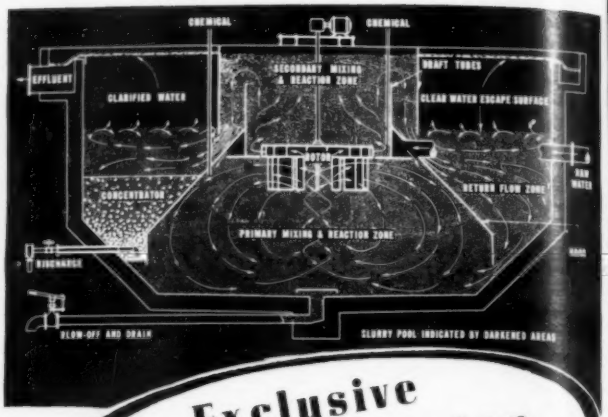
Stewart IRON and WIRE FENCES



Exclusive Rotor Circulator with the ACCELATOR

The rotor circulator makes possible the exclusive operating principle of the ACCELATOR* which effects a "dynamic separation" of treated water from a directed flow of slurry. It has two parts on one shaft connected directly to a speed reducer.

The lower part thoroughly mixes the incoming raw water and treating chemicals with the highly concentrated slurry in the primary mixing zone. It turns over the contents every minute and prevents settling.

The upper part produces the exclusive slurry circulation with the positive return of solids from the separation zone to the primary mixing zone.

All motions in the ACCELATOR are independent of the treating rate. The mixing and positive recirculation are the same with high or low throughput. The surface of the slurry pool remains substantially at a constant level.

Ask for information on other exclusive features of the ACCELATOR. INFILCO Inc., 325 West 25th Place, Chicago, Illinois.

* Trade-Mark Reg. U. S. Pat. Off.

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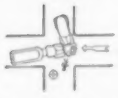
PICTURE every ACCIDENT on the spot

Forbes Handy Accident Reporting Kit



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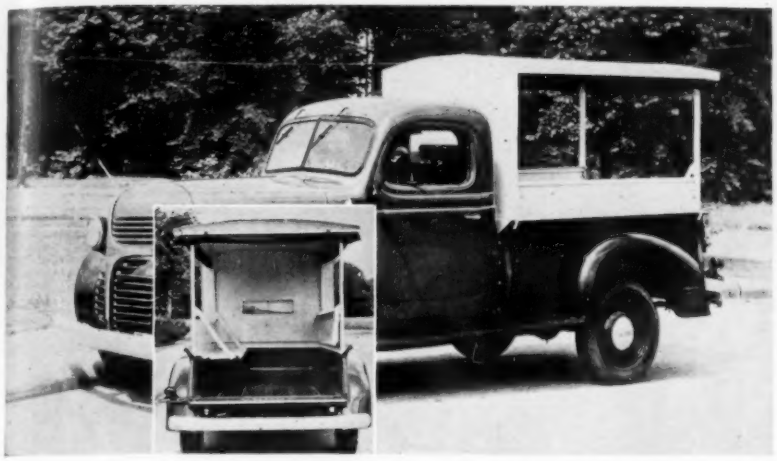
There is a right and a wrong way to plan your house numbering program. Premax Stamped and Embossed Metal Numbers provide the necessary legibility.

Premax Products

DIV: CHISHOLM-RYDER CO., Inc., 4820 Highland Ave., Niagara Falls, N. Y.

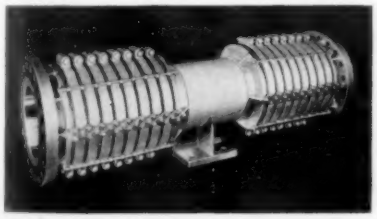
Trucks Can Be Converted for Passengers



This cover converts a ½-ton pick-up into a passenger-carrying vehicle with ample space for tools. Clamping bars hold the top in place and the seats, when not in use, are folded up to the sides. Canvas side curtains keep out dust and rain. The top comes knocked down in four sections. The manufacturer is the Traffic Transport Engineering Co., 14301 Schaden St., Dearborn, Mich.

Uniform Expansions On this Pipe Joint

The ideal corrugated expansion joint is one in which all corrugations move simultaneously during expansion or contraction of the piping; when a line contracts, causing the expansion joint to elongate, there is a tendency for one corrugation to open more than the others. The Zallea improved Duo Equalizing expansion joint functions in two ways to preserve the ideal condition: it equalizes the compression among the corrugations simultaneously when the pipe line is expanding, and at the same time distributes the elongation simultaneously and proportionately among all the corrugations when the line is contracting.



This is accomplished by means of a pantograph. Two or more pantographic chains are superimposed on the equalizing rings of the expansion joint, the neutral points being anchored in the end fittings and intermediate equalizing rings. Any movement of the end fitting is immediately and simultaneously transmitted to all equalizing rings. In this way all the equalizing rings move the same relative distance at the same time. This is entirely unlike the closing action of the self-equalizing joint, in which one corrugation may close completely before the other corrugations are affected.

The Zallea Duo Equalizing expansion joint, manufactured by Zallea Brothers and Johnson, 800 Locust Ave., Wilmington, Del., may be used for all intermittent steam services in long lines, institutions, and industrial plants. They should be used only for constant service where temperature changes do not occur at intervals that are too frequent.

Smithson Trash Receptacles

16 years of research and engineering have produced the world's most useful and most beautiful Trash Receptacle.

- LOW COST OF MAINTENANCE
- NO PAINTING
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- SMOTHERS FIRES
- MADE OF ALUMINUM
- NO CORROSION

Write today for more reasons why the City of Los Angeles purchased 577 of these units.

SMITHSON COMPANY
219 So. Mednik Ave., Los Angeles 22, Calif.

A New Answer to the Old Question
"WHERE IS WATER?"

Often the source of a large supply of clean underground water is overlooked because ordinary methods of getting it out are not practical. If your waterworks or pumping station is located near a stream or a lake and there is adjacent even as little as 15 feet of waterbearing material, then an underground supply utilizing the principles of induced infiltration is feasible.

For more than four years during the war this horizontal collector continuously produced an average of over 8,000,000 gallons per day, utilizing only one-half of the available depth of a 40 ft. aquifer. Water from the nearby Ohio River, infiltrating through the natural sands and gravels, was the source of supply. Though the source was highly contaminated, the end product was cool, clear, bacteriologically safe, odorless and tasteless.

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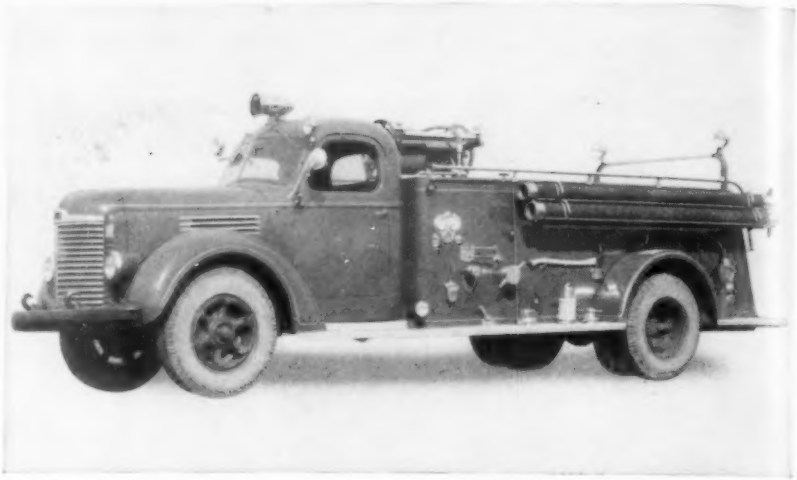
75 YEARS OF SERVICE

A REAL MARK OF DISTINCTION

Back in 1873 this Company started manufacturing pumps — we have never stopped. Today our Barton-American fire pumps are operating throughout the country—yes, even the world. These 75 years of continued service and experience are your guarantee of quality.



Our factory representative in your vicinity will be glad to make a call and help you solve your problem most satisfactorily and economically.

The above fire truck is equipped with our Barton-American, Duplex Multi-Stage, Centrifugal, Mid-ship Mounted Fire Pump, which can be mounted on any commercial chassis. It is the *only* two-stage fire pump with three distinct operating characteristics. *No other pump has this feature.*

AMERICAN-MARSH 75th ANNIVERSARY **PUMPS, INCORPORATED**

BATTLE CREEK, MICHIGAN

ETNYRE
Street Flushers
"THE MACHINE OF A DOZEN USES"

SUPERLINER MODEL . . . REAR ENGINE DRIVE

Streamlined, sleek, and modern is this Etnyre Superliner model. Standard equipment includes 3 nozzles, 600 G. P. M. pump, 800 to 3000 gallon tank. Motor enclosed in rear compartment —easily accessible for servicing. Also used for fire fighting, tree spraying, many other jobs. Get delivery schedules and prices from your Etnyre dealer or write us today.

E. D. ETNYRE & CO., Oregon, Illinois

Underground Lighting Standards for Sale

King Brightway Standards
4000-6000 lumen

Kansas City, Missouri, street lighting modernization makes 300 Underground Standards available. Includes IL transformer. 14 ft., 6 in. to light center.

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Immediate Delivery

Have 8000 ft. 2" Cast Iron Pipe, McWane Precaulked, Bell & Spigot, Heavy Water Pipe, Never used. Price reasonable.

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Phone 2468

Contractors Establish Boards To Settle Disputes

Representatives of the Building and Construction Trades Department of the American Federation of Labor, the Associated General Contractors of America, and seven national associations of specialty contractors have signed an agreement for the establishment in the building and construction industry of the National Joint Board for the Settlement of Jurisdictional Disputes.

John T. Dunlop, Associate Professor at Harvard University and consultant to the NLRB and to the Council of Economic Advisers, has been selected as the impartial chairman.

The announcement was issued by Richard J. Gray, president of the Building and Construction Trades Department of the American Federation of Labor, and James D. Marshall, assistant managing director of the AGCA.

Fiber Conduit Used For Valve Boxes

Valvco Ltd., 57 William St., New York 5, N. Y., manufactures valve boxes whose covers and cover frames are of

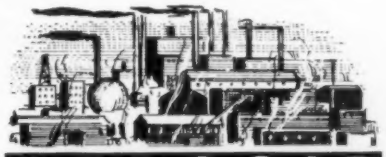
cast iron construction and which have all other component parts of Orangeburg pipe, which is composed of about 25% by weight of tough fibrous structure and 75% of hard coal-tar pitch thoroughly saturated under vacuum. The pitch impregnant imparts permanence; the pipe neither corrodes nor disintegrates and it does not crack with alternate freezing or thawing.

The box accommodates valve sizes of 4 to 10 inches and can be used in trench depths varying from 3 to 6 feet, depending on the valve size. The shaft can be thawed with an ordinary coarse-tooth woodworking saw or cut with a chisel, so no special tools or equipment are required for installation. The shaft is of a sliding type, consisting of two telescoping lengths of Orangeburg pipe. The upper length is 6-inch, with one end machined for drive fit up to flange or shoulder in the inside of the cast iron frame. The lower section is 5-inch pipe with a base to house the valve.

Albert Pleydell Joins Survey Institute

Beginning July 1, Albert Pleydell, for five years New York City Commissioner of Purchase, is to become associated with Survey Institute, 37 Wall Street, New York, management consultants on governmental and business problems. Mr. Pleydell is joining the Institute as an associate of Louis E. Yavner, recently special counsel to the Citizens Budget Commission in its study of municipal departments of the City of New York; Prof. Coleman L. Maze, Professor of Management at New York University, and Maurice G. Postley, public relations counsel, who was formerly Superintendent of School Supplies of the New York Board of Education.

In view of the considerable experience that Mr. Pleydell and his associates have had in the field of public administration, they are well equipped, through Survey Associates, to do a constructive job as management consultants for municipalities.



MERCOID
OFFERS A LINE OF DEPENDABLE CONTROLS FOR VARIOUS INDUSTRIAL REQUIREMENTS

(Illustration shows a Mercoid Pressure Control)

The acceptance of Mercoid Controls is universal. There is scarcely an industry that is not using a Mercoid Control somewhere on vital applications in the control of temperature, pressure, liquid level, mechanical operations, etc.

The hermetically sealed mercury switches used in all Mercoid Controls are dust, dirt and corrosion-proof, thus assuring positive performance under all operating conditions.

Write for Mercoid Catalog No. 600A

THE MERCOID CORPORATION
4201 BELMONT AVE. • CHICAGO, ILL.

AHEAD
of the
TIMES

. . . with the "Diamond Line"

You'll be ahead with McDonald's Diamond Line of quality waterworks goods. Ahead in economy because of long, dependable service; ahead in quality because of the use of the best materials, advanced engineering and manufacturing techniques. The item illustrated is a McDonald Diamond Patent Cap Inverted Key Curb Stop. Round way, Malleable galvanized tee handle, iron pipe. In ½, ⅝, ¾, 1, 1¼, 1½, and 2 inch sizes. Also available in a stop and drain pattern. This and many other items are now available—write for complete information.

EST. 1856
McDonald

A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS • PUMPS • OIL EQUIPMENT

GOOD SIGNS TO LOOK FOR

Street and highway signs that tell the motorist what to do help keep him out of traffic trouble. He looks for them. Don't let him down. Choose your signs from the line that's always improving. That's Miro-Flex, available standard or to your individual specifications. You can order them plain embossed or reflectorized, with glass or lucite buttons. Write for your Miro-Flex catalog today.

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MIRO-FLEX CO., INC.

1824 EAST SECOND STREET • WICHITA, KANSAS

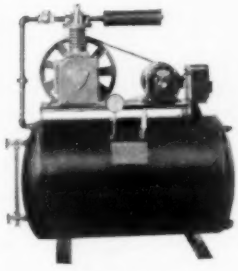
No. 1V-APCO

APCO-V-APCO PRIMERS

FOR CENTRIFUGAL PUMPS
AUTOMATIC POWER OR TANK PRIMERS
SINGLE OR DUPLEX UNITS
DUAL DRIVE WITH GASOLINE ENGINE
ALL UNITS ENTIRELY AUTOMATIC

AIR RELEASE VALVES

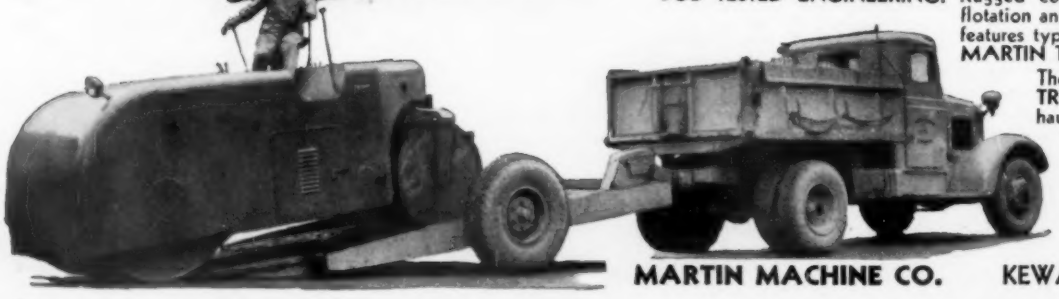
FOR VENTING AIR OR GASES
17 TYPES



No. 2V-APCO

VALVE AND PRIMER CORPORATION 30 W. WASHINGTON ST., CHICAGO 2, ILL.

MARTIN model 22 TRAILER



ANNOUNCING A VERSATILE NEW TRAILER WITH A CAPACITY OF 5 TO 7 TONS.

EXTREMELY LOW PLATFORM HEIGHT. Rollers, Track tractors, and bulk material easily loaded and transported.

JOB TESTED ENGINEERING. Rugged construction, ample flotation and adequate safety features typify all models of MARTIN TRAILERS.

There is a MARTIN TRAILER for every hauling job.

At your request let us send you detailed specifications and prices.

MARTIN MACHINE CO. KEWANEE, ILL.

Stop Leaks With Pipe Clamps

The importance of preventing and stopping leaks is widely recognized as meriting immediate action; even a 1/32-inch opening wastes 4,800 gallons in a month, and a ½-inch opening wastes over 1¼ million gallons.

M. B. Skinner Co., South Bend 21, Ind., this year celebrating its 50th anniversary, offers bell-joint clamps for stopping leaks under pressure. Repairing broken cast iron mains with the split-coupling clamp, handling leaks due to corrosion through the use of emergency pipe clamps, and using pipe-joint clamps for thread leaks where pipes screw into fittings, are other services performed.

Service fittings for steel and cast iron pipe include the service saddle for making connections. Where holes must be drilled in mains through service fittings there is a ratchet-handle drilling device. These products are described in the company's 40-page illustrated catalog, No. 41, which will be sent upon request.

Installing the Skinner bell-joint clamp; the anchor ring is tightened so that the overhanging lip of the anchor ring is tight against the back edge of the bell.

Westinghouse Reduces Prices On Airport Lighting

The Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa., has reduced prices 5 to 10% on all airport lighting equipment.

Production of this equipment has reached an all-time high this year, and improved production methods and greater volume have made possible savings that now can be passed on to the consumer, according to W. F. White, manager of the Westinghouse Lighting Division in Cleveland, Ohio.

Mathieson Elections

The Board of Directors of the Mathieson Chemical Corp. (formerly known as the Mathieson Alkali Works), 60 E. 42nd St., New York 17, N. Y., has elected Thomas S. Nichols president and chief executive officer. George W. Dolan, formerly president, was elected chairman of the board (A. U. Fox, former chairman of the board, has resigned), and John C. Leppart was elected vice-president.

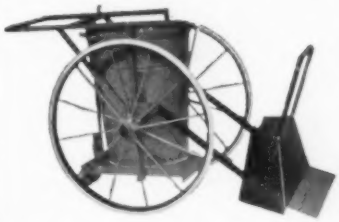
T. S. Nichols

George W. Dolan

John C. Leppart

The officers who were reelected are A. T. Bennett, vice-president and general manager of operations; Howard Berry, vice-president and treasurer; D. W. Drummond, vice-president and general manager of sales; J. V. Joyce, vice-president and comptroller; E. E. Routh, vice-president and director of sales, and A. P. Winsor, secretary.

TARCO'S



"Street Sweepers' Friend"

CAN CARRIERS

Are STRONGER-BUILT to LAST LONGER
FRAMES are single unit, all-welded.
WHEELS available with either rubber or steel tiring.
BEARINGS either roller or plain.
AXLES are rigidly braced for correct alignment.
CASTER wheels are full swivelling.
For one or two cans. With or without all-welded level lifting scoop.

Detailed Information FREE

TARRANT MFG. CO.
East Ave. Saratoga Spa, N. Y.

MORSE BOULGER

Two Bests

1 WASTE DISPOSAL BY INCINERATION

2 INCINERATORS BY SPECIALISTS

Foreground—rectangular combustion-mixing chamber; background—cylindrical ignition chamber; Morse Boulger Mechanically Stoked Incinerator, Sydney, Ohio

Select from this list of five different types and you will get the best type for your particular problem whether it is trash, garbage, sewage sludge, institutional organic matter . . . separately or in combination.

★For Garbage and Rubbish

(1) Cell and Hearth
(2) Circular Hearth and Grates—Mechanically Stoked

★For Sewage Sludge Drying and/or Burning

(3) Multiple Zone Furnace—Mechanically Stoked

★For Garbage, Rubbish and Sewage Sludge

(4) Circular Unit, Mechanically Stoked, with Separate Compartment for Sewage Sludge Reduction

★For Garbage and Trash (Individual Buildings)

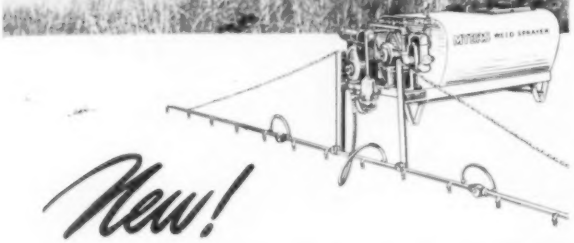
(5) Kernerators (Flue-Fed and Ready-Built)

Our incinerator experience goes back nearly sixty years. Our work is guaranteed. Our incinerators are constructed under the supervision of our own field men who stay with it until the unit is in operation, fully broken in and crews instructed.

MORSE BOULGER DESTRUCTOR CO.

205-R East 42nd St., New York 17, N. Y.

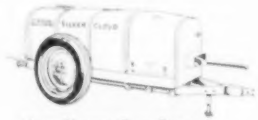
REPRESENTATIVES IN PRINCIPAL CITIES



New!

designed by sprayer specialists!

See and compare this outstanding new Myers Weed Sprayer, built on 77 years of specialized experience. It's equipped with a world-famous Myers Pump that is remarkably simple, rugged, and efficient — and it's serviced by Myers dealers everywhere. Pressures up to 60 pounds insure complete coverage. Steel tank is specially constructed for weed control solutions. Complete with folding, adjustable boom. *Ready for delivery now.* Mail the coupon.



New Myers Gun Type Sprayers— types and sizes for every need.

TAKE OFF YOUR HAT TO **MYERS**

THE F. E. MYERS & BRO. CO.

Dept. K-277, Ashland, Ohio

☐ Send literature on your new Weed Sprayer.

☐ Send catalog on new Gun Type Sprayers.

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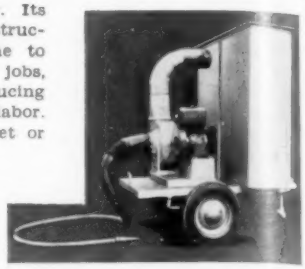
town_____

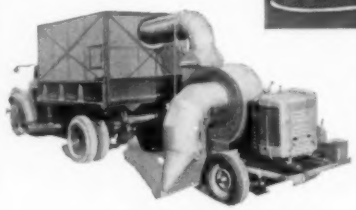
county_____ state_____

CITY OFFICIALS—Attention

VACUUM LEAF LOADER

Is known for its versatility. Its amazing principle in construction enables this machine to handle wide variety of jobs, eliminating or greatly reducing costly cleaning-up hand labor. It will pick up leaves, wet or dry.





ABOVE: Utility Vacuum Cleaner, for small areas

AT LEFT: Vacuum Leaf Loader

UTILITY VACUUM CLEANER

Designed for small areas, such as estates, golf and country clubs, parks, and playgrounds, industrial yards, around shrubbery, high walls, fences, etc.

For facts write for descriptive bulletins

Elliotte Manufacturing Co.

5050 Joy Road—Room 204

M. A. ELLIOTTE, *Sales Manager*

Detroit 4, Michigan

200

UNUSED MARK-TIME PARKING METERS

—Smart, beautiful appearance

—Strongest construction

—Only 3 moving parts

—Operates in all kinds of weather

—Thief-proof like telephone coin boxes

—Made by specialists in time control devices.

Priced for quick sale, including steel mounting post. Only $10.00.

FOR DETAILS WRITE

J. R. RICK

470 E. Washington Street

New Castle, Pa.

Highway Building Depends on Modern Machinery

J. T. Callaway, left, president of the American Road Builders' Association, discusses ground plans for the Road Show with Martin H. Kennelly, Mayor of Chicago.

America's proposed highway construction program of $1,500,000,000 worth of roads in 1948 is a problem that modern machinery must help solve, said J. T. Callaway, president of the American Road Builders' Association, and the program is closely linked to the coming Convention and Road Show to be held in Soldier Field, Chicago, in July.

The Road Show, which is the first to be held since 1940, will show the road builder the machinery of 1948, while the 45th annual convention of the American Road Builders' Association, held concurrently (July 16-24), will acquaint him with the new techniques of modern construction. Leaders in national and state affairs will be on the program, and outstanding authorities in all fields of engineering will speak.

Elections to Board of Governors Of Water and Sewage Worl Manufacturers Association

At the annual meeting of the Water and Sewage Works Manufacturers Association, Inc., held at Atlantic City, N. J., on May 5, the following member-companies were elected to the Board of Governors, effective January 1, 1949:

Engineering News-Record
National Water Main Cleaning Co.
General Electric Co.
Pittsburgh-Des Moines Steel Co.
The Dorr Co., Inc.

Besides these newly elected companies, the Board of Governors includes:

The Ford Motor Box Co.
Hersey Mfg. Co.
Hydraulic Development Corp.
Neptune Meter Co.
The Permutit Co.
Pittsburgh Equitable Meter Division
Public Works Magazine
The A. P. Smith Mfg. Co.
United States Pipe and Foundry Co.
Wallace & Tiernan Co., Inc.

At a meeting of the Board of Governors, which followed the annual meeting, the following officers were elected:

President, Willard F. Rockwell, who is chairman of the Board of Directors of the Rockwell Mfg. Co.

Vice-President, Reginald F. Hayes, vice-president and general sales manager of Hydraulic Development Corp.

Treasurer, Edgar J. Buttenheim, president of THE AMERICAN CITY Magazine Corp.

Secretary-Manager, Arthur T. Clark.

JAWCO **LIGHTWEIGHT TRAFFIC LINER**

City Officials—Here is your answer to an inexpensive, easy to handle, efficient traffic line marker.

Spring tension holds the applicator brush firmly and squarely to the road surface at all times, thereby insuring a clean-cut line of even coverage. The front wheel follows a guide line, insuring a straight line regardless of road irregularities. The paint tank is easily removed for cleaning. JAWCO traffic paint available in White, Yellow, Red and Black.

Write for current price and delivery date today to the

WEAVER MACHINE COMPANY

P.O. Box No. 1224 **York, Pa.**

HERE ARE HARD DRIVING FACTS ON STEEL SHEETING

Many experienced engineers and contractors know that ARMCO Sheeting helps them do a better job at less cost.

Light weight and a small displacement area make ARMCO Sheeting a fast-driving, cost-cutting tool on either temporary or permanent construction. You'll like the way it saves you time and money.

Both interlocking and flange type ARMCO Sheeting can generally be driven to full penetration before excavation. The corrugated metal design assures ample strength without excess bulk. It means easier handling, faster driving and lower costs.

Another big advantage is that on temporary jobs ARMCO Sheeting can be readily pulled and used over and over again. A convenient hole near the top of the section makes pulling easy.

There is no problem in hauling or storing ARMCO Steel Sheeting. Sections nest together and save space. Interlocking type sheeting is available in gages 12 to 7; flange type in gages 12 to 3. Standard lengths are from 6 to 20 feet in multiples of 2 feet. Write for prices and complete information. Armco Drainage & Metal Products, Inc., 2955 Curtis Street, Middletown, Ohio.

ARMCO

ARMCO STEEL SHEETING

They can't say,

'Your Garbage Collection Stinks'

...when you use Heil Colecto-Paks to provide better sanitation and service — at lower cost

There are no flies on your service or your garbage, when you use Heil Colecto-Paks.

Completely hydraulic in operation, smooth-working, quiet, dependable Colecto-Paks assure you the fastest possible performance. Operating tests in many cities and towns against all types of units, prove this.

Here are a few of the Heil Colecto-Pak features that you can count on to speed up, simplify, and improve your garbage and refuse collection:

Totally-enclosed steel body, developed with the help of recognized health and sanitation authorities, keeps garbage and refuse out of sight and smell — eliminates the hazards of flies.

Easy loading — average loading height is only 36 inches. Your crews load faster, easier, and with less strain.

Efficient use of body space cuts down trips to the dump, saves gasoline and tires, speeds the work. You see, the packer plate compresses the material toward the discharge end so that 24 cubic yards of wrapped garbage are carried in a 12-cubic yard body.

The Heil Colecto-Pak, designed for garbage, is available in 9- and 12-cubic yard sizes. The Heil Colecto, a twin brother of the Colecto-Pak, except that the packer plate is omitted, is designed for handling ashes and refuse. Give your community greater health and satisfaction, at lower cost — specify Heil Collecto-Paks or Colectos on your next bid. Write for descriptive literature.

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WIS.

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No Need to Weed

With DOLGE SS WEED-KILLER on the job!

Use where *no vegetation* whatever is desired.

Penetrates to the roots, destroying the plants completely.

Sterilizes the soil and prevents seeds from sprouting.

E.W.T. SELECTIVE WEED KILLER

NOT INJURIOUS to most grasses, but acts on weeds *effectively*.

DOES *NOT* STERILIZE most soils. RIDS turf areas of dandelions, plaintains and other hardy weeds . . . perfect for ragweed and poison-ivy control.

GET *ALL* THE FACTS!

Write for DOLGE'S brand-new booklet

"CHEMICAL WEED CONTROL"

. . . complete, up-to-date information for dealing with your weed problems swiftly, economically, lastingly.

The C. B. DOLGE CO.

WESTPORT, CONNECTICUT

Stamping Out Mosquitoes in Toledo Area District

Recently, officials of the Toledo Area Sanitary District decided to find an efficient method of stamping out insects in a 17-acre floodwater area on the outskirts of the city. By this action, they inadvertently hastened the development and introduction of a new implement designed for use with the Universal Jeep equipped with a hydraulic lift manufactured by the Monroe Auto Equipment Co. of Monroe, Mich.

The new implement is a 6-foot-capacity hydraulically controlled steel scoop, then in the process of development by the Newgren Co. of Toledo, Ohio. Dr. H. A. Crandell, superintendent of the Sanitary District, found that the new lift would supply the necessary hydraulic pressure and motive power for the job of immeasurably speeding ditching and ditch cleaning in the flooded area.

With a cutting width of 24 inches and a cutting depth of 1 to 6 inches, the new scoop is designed especially for excavating, landscaping, terracing, leveling, filling gullies and washouts, and levee, dam, road, basement and pond building, as well as ditch digging. The scoop can be attached or detached from the three-point hitch or the Monroe hydraulic lift by one man in a few minutes.

The load carried by the scoop can be dumped while the jeep is moving forward or backward or standing still. A heavy-duty release holds the scoop firmly in position until the load is dumped by a release rope at the driver's seat; then the scoop flips back to the reloading position automatically.

Catchpole Appointed By Ford Motor

George M. Catchpole has been appointed assistant manager of the fleet sales section of the Ford Motor Co., Dearborn, Mich.

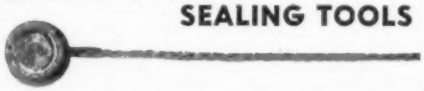
Insist on AMALEAD

THE WIRE WILL BREAK BEFORE IT WILL PULL OUT OF LEAD

Reg. U. S. Pat.-Off.

SEALS OF MERIT—for EVERY PURPOSE

WIRE SEALS and SEALING TOOLS



Above: seal for parking meter coin containers, water, gas and electric meters. Also padlock and coin bag seals and sealing tools. Wire lengths as required.

Above: self-locking car seals for automatic voting machines, water and steam valves—no sealing tool required; actual size ⅜" x 8½".

Write for samples, literature and quotations

E. J. BROOKS COMPANY

169 North 13th Street
Newark 7, New Jersey

1873—*Protecting Industry 75 Years*—1948

Fisher M-Scope

"HAN-DEE"

combination

Leak Detector, Pipe Locator

Using the *latest type miniature tubes and batteries*, the new Fisher "HAN-DEE" Leak Detector and Pipe Locator combination precisely locates costly leaks in any pressure line. As a Pipe Finder, it accurately locates, traces the course, and measures the depth of buried pipes or cables.

Fisher "HAN-DEE" two-in-one unit

$142.50

FREE LITERATURE

For Free illustrated catalog, specifications and price list on Fisher M Scope equipment, write Dept. 3 today.

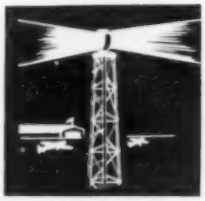
FISHER

Research Laboratory, Inc.

Palo Alto, California

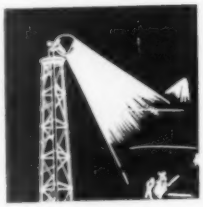
"Packaged" Aluminum Towers

The Trig Tower for fire and police departments — two-way radiotelephone, emergency lighting, siren installation, loudspeaker, and traffic control signals.



Test gear, field and signal lighting, markers, antennae, and weather and communications systems may be attached to the Trig Tower around airports.

Municipal radio stations can use the Trig Tower also; AM and FM antennae and auxiliary equipment are quickly installed on the tower.



For schools and colleges, the Trig Tower may be used for floodlights and for antennae around campus and on top of buildings.

The Rostan Corp., 202 E. 44th St., New York 17, N. Y., is manufacturing a completely "packaged" aluminum tower that may be used for all purposes in the communications, electronic, and electrical fields. Trig Towers are made in self-supporting and guyed types, triangular design, and are entirely fabricated of 61 ST 6 aluminum alloy. The ladder, with 15-inch rung spacing, is integral with one side of the tower.

Produced in 10-foot sections, the free-standing type comes in heights of 10, 20, 30 and 40 feet, and the guyed type in heights of 10 to 100 feet. The only tool required for the erection is a wrench. The tower, which requires no protective painting in most areas since aluminum is corrosion-resistant, is designed to withstand 90-mph winds.

MacLean Assigned To Indianapolis Office

Gordon E. MacLean has been appointed to the Indianapolis district office of the Dearborn Chemical Co., Chicago, Ill. Mr. MacLean was transferred to the sales department from the research division, where for the past seven years he has been working on the development of corrosion inhibitors.

Hays Appoints Representative For South Central Area

Gene L. Brister has been appointed sales representative for the South Central territory (Maryland, District of Columbia, Virginia, North Carolina, and South Carolina) by the Hays Mfg. Co., Erie, Pa.

Gene L. Brister
United States Navy.

Mr. Brister has had considerable sales and technical experience, serving in the sales department of the Electric Auto-Lite Co. During the war he served as a crew chief and aircraft technician in the

For Quicker-Safer-Cheaper Asphalt Melting

USE THE 1948

Aeroil "Heet-Masters"

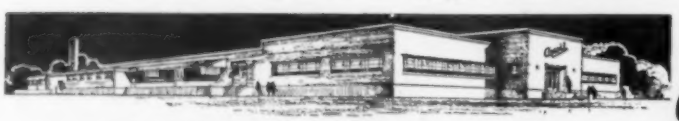
Write for Leaflet 400-AC

AEROIL PRODUCTS COMPANY, INC.

SOUTH HACKENSACK, NEW JERSEY

San Francisco Chicago Dallas Los Angeles Seattle Jacksonville

New Address After July 1st



NEW 2-ACRE MODERN Aeroil PLANT

Opens July 1st. Better Service for Aeroil Users

Universal Metal Ladder "UNILAD"

TESTED APPROVED

Tensile Strength 2,200 Lbs.

Universal Requirements

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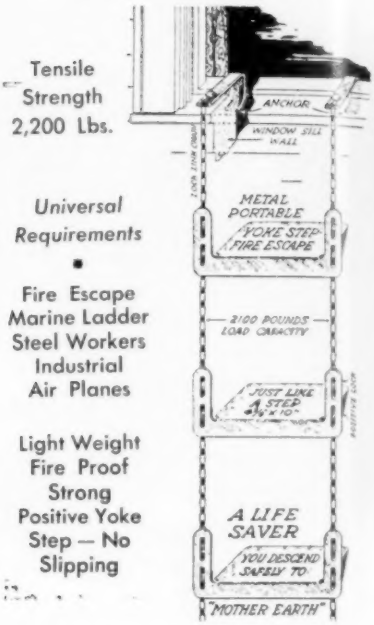
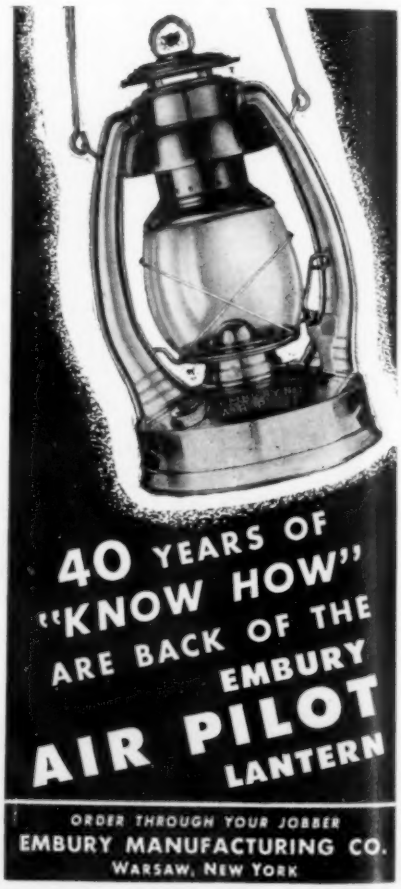
Fire Escape
Marine Ladder
Steel Workers
Industrial
Air Planes

Light Weight
Fire Proof
Strong
Positive Yoke
Step — No
Slipping



UNIVERSAL METAL LADDER CO.
Houseman Building
Grand Rapids 2, Michigan


40 YEARS OF "KNOW HOW" ARE BACK OF THE EMBURY AIR PILOT LANTERN
ORDER THROUGH YOUR JOBBER
EMBURY MANUFACTURING CO.
WARSAW, NEW YORK

Some Prominent Signal Engineers At the Test of a Well-Known Traffic Signal Timer

Final inspection of the Eagle Signal Multidial Controller.

Several prominent members of the International Municipal Signalmen's Association get together.

Adin Chase, president of the International Municipal Signalmen's Association; G. O. Wilson, chairman of the Midwestern Section convention held in Rock Island, Ill, and Matthew Porosky, president and general manager of the Eagle Single Corp. are shown at the company's new plant in Davenport, Iowa. In forwarding these photographs Mr. Porosky explained his company's unprecedented production as the result of overflowing populations in what used to be small vilages; post-war growth of vehicular traffic, and outdated traffic signals that have become a liability to traffic flow rather than a help. Eagle Signal," he said, "has little or no control over the first two items, but about the latter, it is rapidly delivering the new Multidial Controller, which will control any intersection, however intricate. It is described in Bulletin E10. We have just recently developed more fully our semi-actuated controller, which is basically electronic."

Hydraulic Development Appoints Finley

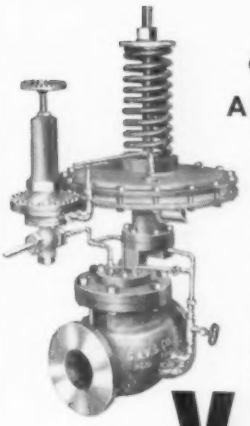
Thomas R. Finley has been appointed by the Hydraulic Development Corp., West Medford Station, Boston 56, Mass, as Florida representative of the company's line of Hydro-Tite and Fibrex equipment.

Mr. Finley, who operates Finley's Municipal Supply Co., at 1133 W. Church St., Orlando, Fla, also carries a general line of waterworks material.

Thomas R. Finley

Sales Representatives

The Burgess-Manning Co., Libertyville, Ill., has appointed three new regional field representatives for the Pacific coast: H. G. McLaughlin Co., Inc., Seattle, Wash.; The Merrill Co., San Francisco, Calif., and the Rucker Co., of Oakland, Calif., to handle sales in the Los Angeles area.



GOLDEN-ANDERSON

Single Acting Differential Altitude

Valves

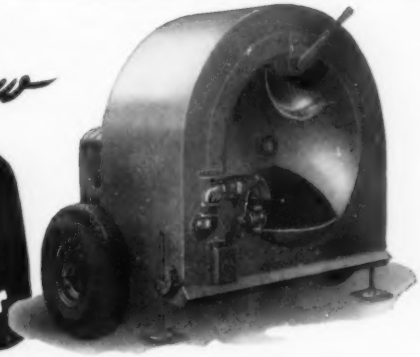
Designed to maintain a constant water level within a variation of 3" to 12", these valves insure proper storage water circulation and eliminate stagnation in the storage supply. Also adaptable for water treatment storage tanks using water wheel pumps for chemical mixture.

Write for Descriptive Catalog

GA GOLDEN-ANDERSON VALVE Specialty Company PITTSBURGH 22, PA.

See me at the Road Show

the FOOTE Kinetic mixer



Here will be a good chance to look me over—the first really small asphalt plant for handling your patching jobs. You can find out for yourself that even though the *Foote Kinetic Mixer* is small I am well built, amply powered and fully able to deliver 3 cu. ft. of asphalt mix in 30 seconds.

Here is a chance to have all your questions answered and learn how you can handle those jobs like driveways, tennis courts, shop floors and patching, profitably.

See me at the Road Show July 16-24, Soldier Field, Chicago, and in the meantime ask for Bulletin K-100.

THE FOOTE CO., INC. • 1958 State Street Nunda, New York

FOOTE

MULTIFOOTE CONCRETE PAVERS
ADNUN BLACK TOP PAVERS
Kinetic ASPHALT MIXERS

BOOTH 3106 SOUTH CONCOURSE

Univ. of Nebr. Awards Advanced Degree to Bennison

The years of engineering study on the subject of ground water development by E. W. Bennison, Edward E. Johnson, Inc., St. Paul, Minn., have resulted in his being awarded an advanced professional degree by the University of Nebraska.

Mr. Bennison, a member of the class of 1909 at the University of Nebraska, first became active in the field of ground water in 1924 following periods of work in county and city engineering and a tour of duty as an officer in the first world war. In 1924 he served as engineer on the staff of the Kelly Well Co., Grand Island, Nebr., until 1936 when he became district manager of the Pomona Pump Co. in Chicago. From 1939 to the present he has been Office Engineer of Edward E. Johnson, Inc., in which capacity he wrote the text "Ground Water — Its Development, Uses, and Conservation."

The title of the thesis that he presented for his advanced civil engineering degree is, "The Development of Ground Water."

Gillespie New Head Of Florida Engineering Society

Wylie Gillespie, of Smith and Gillespie, Jacksonville, Fla., consulting engineers, was named president of the Florida Engineering Society at its recent meeting held in Orlando, Fla. About 400 engineers in Florida were present.

Other officers include A. P. Michaels, Orlando, first vice-president; Emil A. Nordstrom, St. Petersburg, second vice-president; David B. Lee, Florida State Board of Health, Jacksonville, Secretary; Raymond Chase, Jacksonville, treasurer.

A.C.C.L. Holds Annual Meeting

The American Council of Commercial Laboratories will hold its annual meeting from June 18 to 20 at Colorado Springs, Colo. The convention will have particular importance this year because of the part the members of this Council will be called upon to play in promoting the standards and quality of merchandise furnished Europe under the Recovery program, according to the organization's president, B. L. Oser, 48-14 33rd St., Long Island City, N. Y. The Colorado Springs meeting will devote the major portion of its discussion to the intricate problems involved in testing and outlining the technical phases of international contracts.

Vice-President R. W. Truesdail, Truesdail Laboratories, Los Angeles, Calif., reports that the member laboratories, representing millions of dollars in specialized equipment, are entirely independent and impartial.

Thousands of contractors have switched to Blaw-Knox Steel Forms, and find they get a high dollar return on their investment. Whether the job is city street, curb and gutter or sidewalk—it can be done quicker and cheaper with standard Blaw-Knox form set-ups.

Easy to handle in both placement and removal. Too, the steel imparts a smooth finish to the concrete, eliminating the hand-finishing necessary when expensive wood forms are tediously built for each job. These forms are always ready for action—to use again and again . . . For illustrated data on the complete line, write today for Catalog No. 1859.

BLAW-KNOX DIVISION
of Blaw-Knox Company
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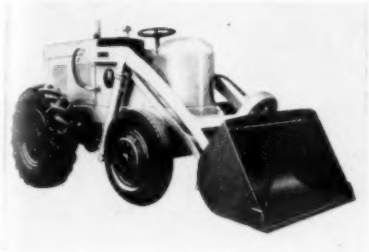
BLAW-KNOX CONSTRUCTION EQUIPMENT

Hydraulic Bucket Control Added to Hough Payloader

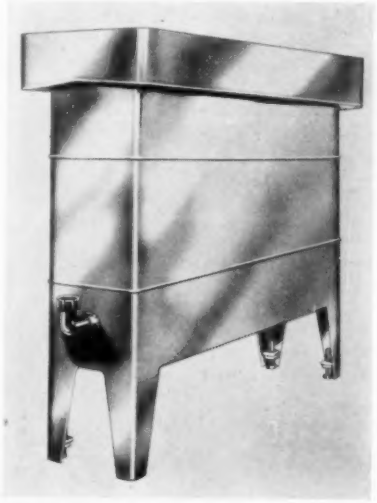


The Hough Model HF ¾-cubic-yard Payloader tractor shovel, which was previously equipped with hydraulic lift and lowering of the bucket, now has the added feature of a hydraulic bucket control which dumps and closes the bucket by fingertip-actuated hydraulic power. The bucket can be dumped gradually or instantaneously as desired and can be closed immediately by the same hydraulic cylinder. Speed and ease of operation are increased, since the bucket does not have to be dropped to the ground or the tractor reversed in order to close the bucket.

The Payloader is manufactured by The Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Ill.

Electronic Floc Producer For Water Treatment

The long-awaited electronic floc producer for water treatment is now ready for general use according to Alhydro,



Inc., 516 North Charles St., Baltimore 1, Md.

The Alhydro floc producer forms a concentrated aluminum hydroxide through the principle of the electrolytic dissolution of aluminum. It operates through the application of variable low-voltage direct current to an assembly of alternate aluminum and stainless steel plates. The plate assembly is enclosed in a stainless steel tank through which a controlled flow of water is maintained. The aluminum plates serve as the anode, and aluminum particles are released from the plates as the current passes through. These free particles react in the water flowing around the plates and immediately form concentrated aluminum hydroxide floc.

The floc is carried to the top of the tank and then flows over into a discharge trough and discharge pipe to the point where it is introduced into the raw-water stream to be treated. Of course as the aluminum is converted into floc the plates are gradually used up, but replacements are easily installed without the use of special tools or equipment.

The advantages of this mechanism, according to the manufacturer, are as follows:

An efficient floc is formed at any pH or temperature normally found in industrial or potable waters and no water pre-conditioning for good coagulation is required.

There is no resultant acid condition requiring corrective chemicals after treatment.

No "jar tests" are required.

The volume of floc can be instantly changed.

The floc re-forms immediately if broken by pipes or pump, reducing the instability of the floc.

The Alhydro floc producer comes in one standard-size unit for use singly or in multiples, and expansion can be accomplished easily by the addition of individual units.

CEMENT GUN COMPANY

"GUNITE" CONTRACTORS

GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.

NO MAINTENANCE IN 23 YEARS

The before and after photos show a reservoir we re-lined with "GUNITE" in 1925 for the Village of East Aurora, N. Y. Recently Mr. V. E. Haemmerlein, Village Engineer, wrote us:

"The job you did of Guniting our reservoir is still in first class condition. Some hair cracks have developed near the top. I drilled one-half inch holes where some of the cracks showed but find that they are only about one inch deep. They do not go beyond reinforcing. We have had no maintenance whatsoever."

We can similarly solve your problem if you have an old leaky or disintegrated reservoir. We invite you to call on us for complete information, recommendations or estimates on any "GUNITE" work which you may be planning.

Our 72-page bulletin D2300 describes this job and scores of other profitable uses of "GUNITE." Write for your free copy today.

FOR CLEANER, SAFER
SHOWER ROOMS AND SWIMMING POOLS

"Bull Frog"

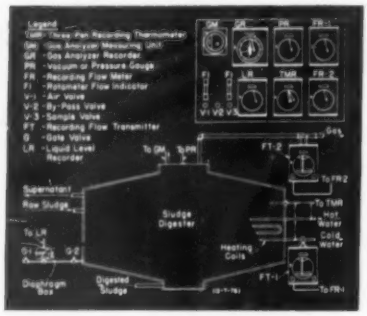
SAF-T-KLENZ

Developed specifically for removing rust stains, lime deposits, soap oil, body grease, algae formation.
Leaves floors and decks practically slip-proof.
Minimizes conditions that breed and spread infectious germs.
Simply sprinkle Saf-T-Klenz on damp surface, wait a minute or two, scrub or mop lightly, and flush with clear water.

WRITE TODAY FOR LIBERAL FREE SAMPLE!
BERMAN CHEMICAL CO., 715 SUPERIOR ST., TOLEDO 4, OHIO

What Instruments Do Digesters Need?

To function correctly, digesters must supply an environment that allows the anaerobic bacteria to grow and thrive. To insure this, all the tanks should be well controlled by instruments. The Brown Instrument Co., Philadelphia 44, Pa., has, in its recent Instrumentation Data Sheets, outlined what sort of instrumentation is required.



Instruments installed according to this design would permit close control of digester operation.

First on the list is digester temperature. In large digestion tanks without stirring apparatus, temperature differentials may exist between various parts of the tank. Temperature measurement in such cases can be accomplished by using several thermometers with their bulbs located at diverse points.

A second and equally important point is the temperature of the heating water. The temperature of the influent is particularly important, since if it rises much above 135° F., excessive incrustation will form around the coils. In addition to temperature recorders, it is usually necessary to control automatically the temperature of the heating water unless a supply at the correct temperatures is available. Control can be accomplished by the use of a non-indicating temperature controller of the proportioning type, and a suitable throttling valve to regulate the quantity.

Tank-level measurements also are required. In many plants a liquid-level meter for the digestion tank furnishes a record of all additions and withdrawals from the tank, and minimizes the danger of overloading or overflowing.

Flow records also require attention. Flow of raw sludge to the digester, flow of supernatant and digested sludge from the digester, all are measured by flow meters with venturi-type elements. The flow of water through the heating coil is frequently measured to indicate leaks, to avoid circulating excess hot water, and to estimate the interior incrustation of the coils. An orifice plate meter will take care of this.

Fixed-cover digestion tanks should be equipped with combination pressure-vacuum gages, unless they are connected directly with a floating cover tank in a manner to permit pressure equalization throughout the system. Vacuum recorders are of particular importance on tanks where the gas flows directly to an engine without passing to a gas holder en route. Under these circumstances, because of the engine suction, a partial vacuum is sometimes produced in the digester that may cause the entrance of air and create a dangerous, explosive atmosphere. The vacuum gage can be equipped with an emergency shut-off device to preclude such a condition.

A gas analyzer also insures operating safety. This instrument not only indicates the danger of an explosive atmosphere in the digester, but also provides one of the best indications of the progress in digestion.

Instrumentation Data leaflet 29.6-[illegible] provided by the Brown Instrument Co. describes these factors more in detail listing the required instruments and telling of their installation and operation.

Mack Appointments

C. F. Larsen has been appointed manager of general service and C. A. Slifer his assistant by Mack Trucks, Inc., Empire State Bldg., New York, N. Y. Their headquarters will be at the company's Plainfield, N. J., plant. George McCall has been appointed manager of service engineering, with headquarters in Long Island City.

With seven miles of badly corroded 36" and 48" steel pipe up for replacement at an estimated cost of $1,800,000., the City of Montreal reconditioned the entire line at a total cost of only $205,000. — a saving of $1,595,000.

Reconditioning included a thorough cleaning and removal of incrustation and debris by the National Water Main Cleaning Co. after which the cleaned surface was centrilined. Final results indicate reduced friction losses, improved carrying capacity and permanent protection against leakage and internal corrosion.

cleaning and reconditioning water main
SAVES MONTREAL $1,595,000

Why not let our engineers find out if similar savings can be effected in your city? No obligation of course!

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Concrete and Masonry Repairs

The Bondact Process is used for the repair of such structural defects as honeycomb concrete and settling cracks and for bonding new concrete to old, lining water reservoirs, tanks, and steel acid vats; for coating surfaces subject to damage from salt conditions, for vapor sealing both the inside and outside of light-weight aggregate and porous concrete, and for the joining and repair of concrete sewer and water tile and pipe. It achieves bonding action without the use of an anchoring material or of any adhesive chemical or substance; there is perfect cohesion of new sand and cement mortar to other surfaces without shrinkage or separation.

In the Bondact Process, the first step is sandblasting. Then new sand and cement mortar is applied by means of the Bondact gun, designed so that compressed air entering it at a given pressure and volume creates a suction that siphons the premixed dry sand and cement aggregate from the hopper. As the aggregate is picked up in the velocity of the air stream in the gun, the cement is hydrated by atomized water injected at the gun and the hydrated aggregate is deposited instantly. The bonding action that is accomplished is as follows: In the beginning, the impact deposits the cement but all of the sand rebounds until a coat of neat cement about 1/64th of an inch thick is deposited. The cement-coated sand then begins to build up and only about 25% of the sand continues to rebound. Since the premixed aggregate is blended in the proportion of one part cement to four parts sand, the resultant deposit is rich, as it averages 1 to 3 after the sand rebound.

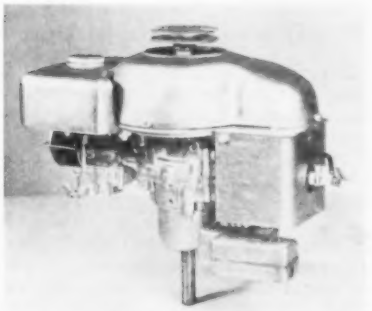
A dense non-porous deposit that does not shrink as it cures is assured because of the low water ratio (not more than 3 gallons per standard sack of cement). This quantity of water is sufficient for hydrating and setting the cement but not enough to lubricate it.

Concrete placed by the Bondact Process is extremely dense and weighs approximately 172 lbs. per cubic foot. This Bondact Equipment is manufactured and distributed by the Bondact Division of the Consolidated Sales Co., 801 Oak Street, Kansas City 6, Mo.

1-Hp Gasoline Engine

Power Products Corp., Grafton, Wis., presents an aluminum vertical-shaft gasoline engine weighing 16 pounds which develops a full horsepower and is used for rotary-type lawnmowers, pumps, compressors, generators, and spraying equipment.

The company has already introduced a similar engine with a horizontal



shaft, and expects to offer soon a 1½-2-hp unit.

RUSTA RESTOR

Prevents Tanks from Rusting

● Employing the basic principles of electro plating, Rusta Restor maintains the tank in a "neutral" condition that prevents rusting. Inexpensive to install – cheap to operate – safe. Approved by national and state authorities. Write for fully descriptive catalog!

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A DIVISION OF

THE JOHNSTON & JENNINGS COMPANY

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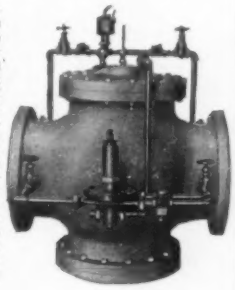
ROSS AUTOMATIC VALVES

Altitude Valves for tank and reservoir, with two sets of controls — Automatic Hydraulic and Electric Remote Control. Hydraulic pilot normally operates the valve, while electric pilot is used for emergency only.

Model 40-DAWR Double Acting Valve may be operated by electric pilot regardless of elevation of water in tank or reservoir, for a break in supply or distribution and when fire pressures require direct pumpage. Model 30-AWR Single Acting Valve may be controlled in same manner.



Model 40-AWR Single Acting semi-throttling valve will close on reversal of flow and the electric pilot would serve only a single purpose — either to open wide or close as emergency may require.

Established 1879

ROSS VALVE MFG. CO.

Incorporated

P.O. BOX 596, TROY, N.Y.

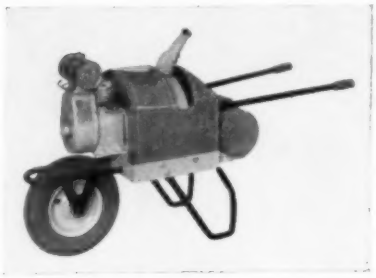
Fitzhenry-Guptill's Mist Blower for Small Areas

The wheelbarrow-model Guptill Whirlwind mist blower is a light-weight mechanism for applying concentrates to small acreage. It projects the mist stream 30 to 40 feet vertically in still air or drifts it for long distances with the wind.

Useful for weed-killing, mosquito and fly control, and shade-tree insect control, the Whirlwind is operated by one man, with all the controls at his fingertips.

The blower is three-stage with direct drive from the motor. The blower scroll is mounted on independent bearings so that the entire assembly can be rotated to direct the air stream. The advantage of the three-stage design is that it makes possible the use of relatively small-diameter air nozzles to give high velocity to the air stream without seriously reducing the volume of air projected.

A new type of air and fluid nozzle was developed with the fluid injected at four points within the air stream for thorough mixing of fluid and air. Orifices are large and will not be clogged by solutions, emulsions, or suspensions. The solution tank holds three gallons. The end outlet for fluid return is arranged so that the fluid sweeps the bottom of the tank to prevent settling of solids. Fluid pressure at the air nozzle is throttled to the desired spraying pressure by a needle valve located on the dashboard; a gauge for indicating pressure is within range of the operator's vision.



The Guptill Whirlwind wheelbarrow mist blower is useful for small areas.

The 1¾-hp engine is air-cooled. For applying 2, 4-D and other weed-killers or solutions directly without air, a boom attaches back of the wheel, supporting four low-gallonage nozzles on 18-inch spacing. Nozzles have interchangeable tips and can be selected to give from 2 to 3 gallons per acre upwards.

Special booms up to 20 feet long, with as many as 12 nozzles, can be tractor-mounted and operated from the Whirlwind.

The Whirlwind wheelbarrow mist blower is manufactured by the Fitzhenry-Guptill Co., 135 First St., East Cambridge, Mass.

with E & J RESUSCITATION EQUIPMENT

To reduce likelihood of deaths from drowning *make sure* that your fire dept. emergency service, beaches and pools have sufficient up-to-date E & J resuscitation equipment. Full information and demonstration, with no obligation; write or wire *at once* to Dept. N-6

E & J MFG. CO., Glendale 1, Calif.

• There are no tricky kinks of design in the Buffalo that are hard to understand or that make assembly difficult. No experts are needed to make a replacement or repair. There are fewer parts and they are all accessible.

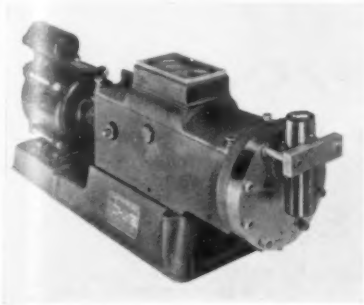
Fair metering is a matter of ethics and it's the neighborly thing to install meters so that small flows or large flows are recorded accurately. In a small community Buffalo made American or Niagara Water Meters are first choice.

Cities, too, find the simplicity and moderate cost of Buffalo Meters make them the best investment.

Write for information covering simple design, easy assembly and interchangeability of Buffalo Meter parts.

AMERICAN BRONZE CASE
NIAGARA GALV. IRON CASE
WATER METERS
BUFFALO METER COMPANY
2902 MAIN STREET • BUFFALO 14, NEW YORK
Simplicity

New Proportioning Pumps For Flows from 0 to 330 gph



The Pulsafeeder pump is micro-adjustable over the entire capacity range while the pump is in operation.

The Lapp Insulator Co., Inc., Le Roy, N. Y., is manufacturing a new line of Pulsafeeder proportioning pumps. The series, designated as CP models, are available in four sizes: #1 for flow from zero to 11 gph., #2 up to 40 gph, #3 up to 100 gph, and #4 up to 330 gph. Duplex, triplex, and other multiple-head arrangements are offered for continuous blending or feeding.

A combination piston-diaphragm unit, the pump is so designed that the piston, reciprocating over a measured stroke, displaces oil, which in turn pulsates a diaphragm. The hydraulically measured pulsation of the diaphragm actuates the flow of the chemical being handled, providing the accuracy of positive piston displacement and measured feed, while at the same time incorporating the diaphragm-pump advantages of elimination of the stuffing box and complete isolation of the chemical from pump parts.

Various valve designs, diaphragm materials, and materials of construction are offered to meet the chemical requirements of specific applications.

All-Purpose Power Tractor Has Seven Attachments

The Gardenaid tractor, equipped with a 1½- to 2-hp motor that uses about one gallon of fuel a day, is designed for all-purpose use. It can be equipped with six different attachments, each of which is attached by lifting a pin in the hitch. Automatic digging ability is provided through the floating hitch, so that when the tractor turns the cultivator turns with it without being directed.

Weighing 215 pounds, the Gardenaid, which is manufactured by the Eastern Tractor Mfg. Corp., Kingston, N. Y., has a double V-belt and a sliding motor clutch that eliminates an additional break in the drive belt. It moves at speeds ranging from ¼ to 3 mph, controlled by a hand throttle. Each wheel has overrunning ratchets so that the machine can turn within its own length. Power take-off permits its use with a pump or similar equipment, making it particularly useful for municipal departments.

The motor has float-feed carburetion, splash-system lubrication, forced air-cooling from the fan and flywheel in combination, and a governor which automatically controls the desired speed.

The attachments that may be obtained are a dirt plow for furrowing; a disc, consisting of two four-disc gangs, that is adjustable and reversible; a cultivator equipped with six steels and two idling wheels, all adjustable and reversible; a harrow consisting of 12 forged steel adjustable spikes on a frame, for harrowing slices and crushing, pulverizing, and leveling at the same time; a cutter-bar 32 inches long for cutting grass, weeds, and small brush; a 25-inch power-driven reel lawn mower, and a snowplow-grader with a 48-inch reversible blade. With the last attachment, the Gardenaid doubles effectively as a sidewalk snowplow as well as a grader.

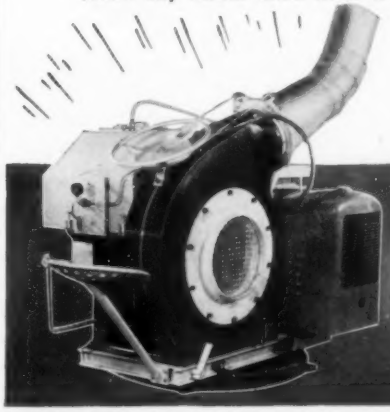
MIST SPRAYING IS

MUST

SPRAYING IN 1948

It's no longer just a wonderful *idea*—it's a proved *fact!* Mist spraying does a better job, a cleaner job, in less time and at HALF THE COST. Write for copies of letters from those who have used Lawrence Aero-Mist Sprayers. Read what these users say about them after a full year's experience. Lawrence equipment pioneered in this field, developed the turntable design and the unique centrifugal blower. It has now been thoroughly tested and proved by enthusiastic users all over the country.

WRITE for complete information on MIST BLOWING from The Lawrence Aero-Mist Sprayer Company, Greenfield, Mass., U. S. A.



The LAWRENCE AERO-MIST SPRAYER

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This picture shows the proposed Erie Boulevard Expressway, Syracuse, N. Y.

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